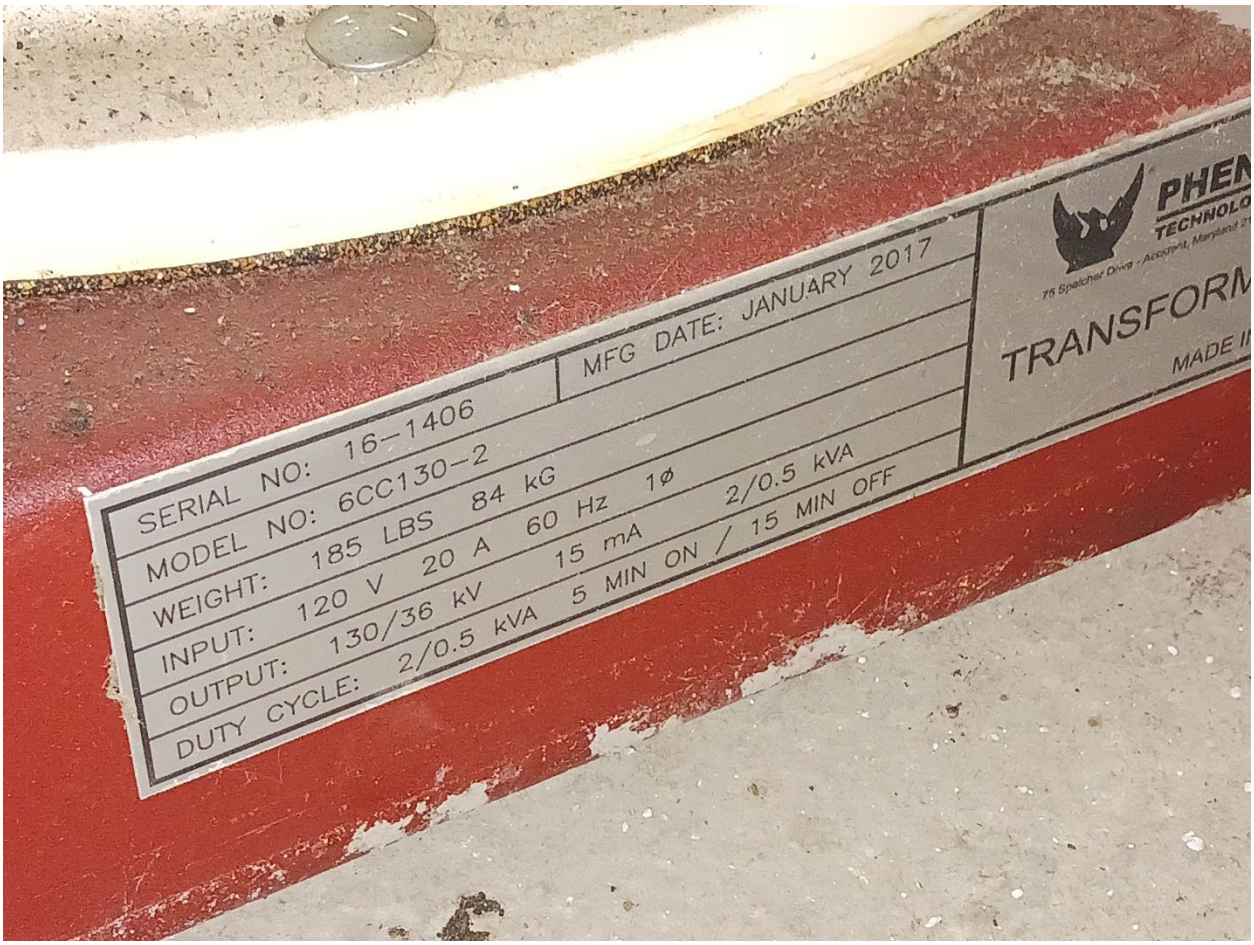
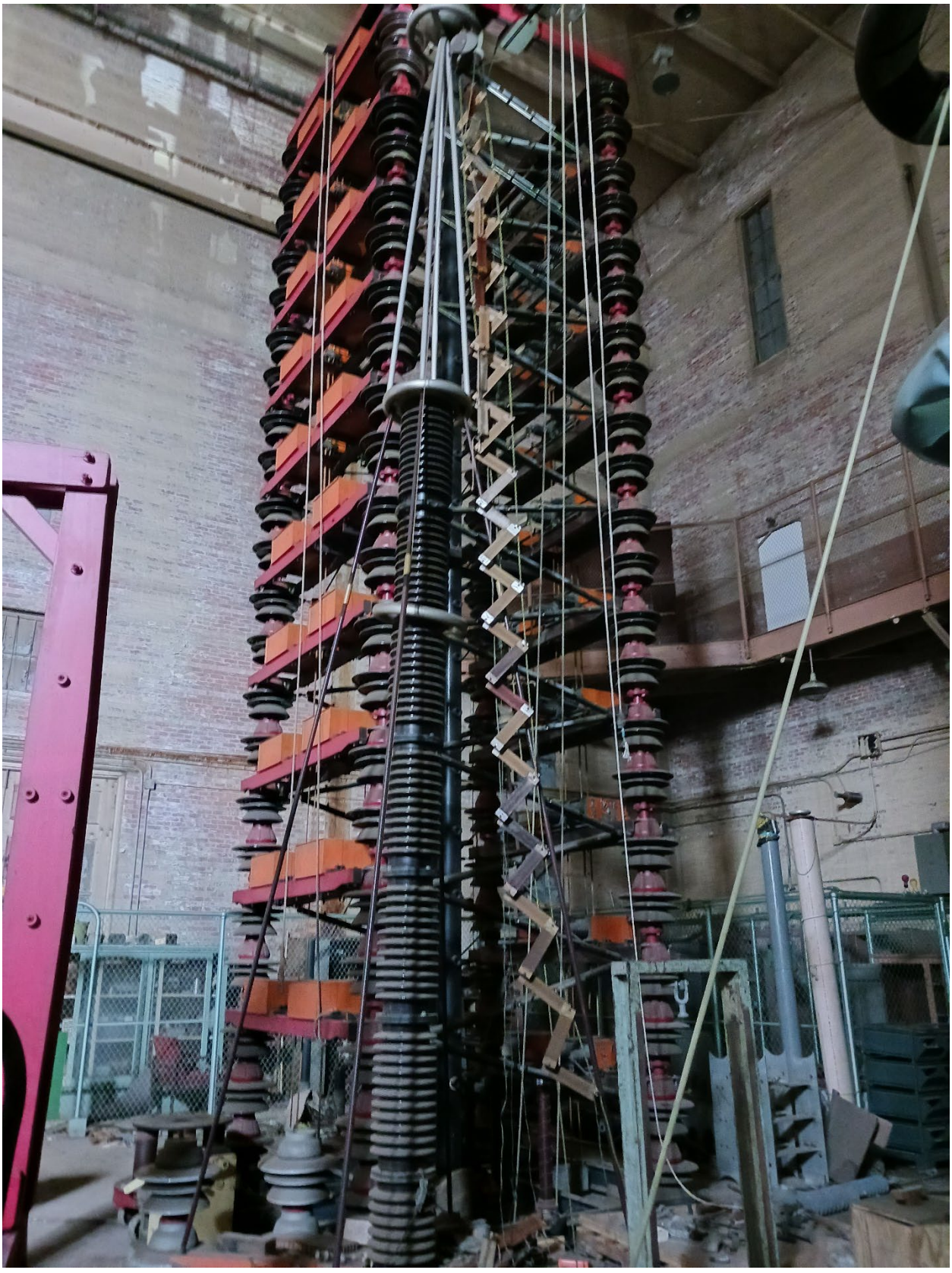
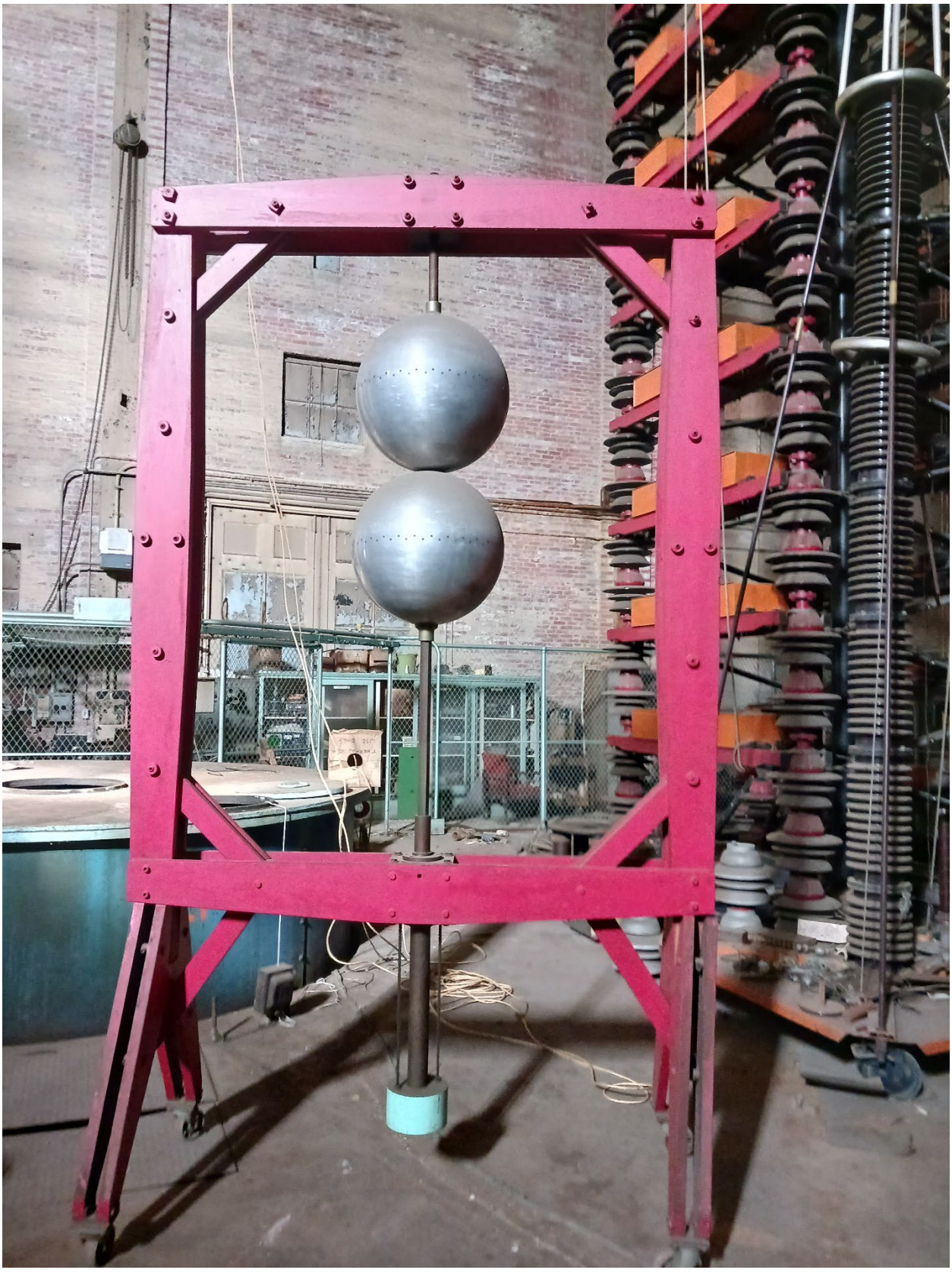
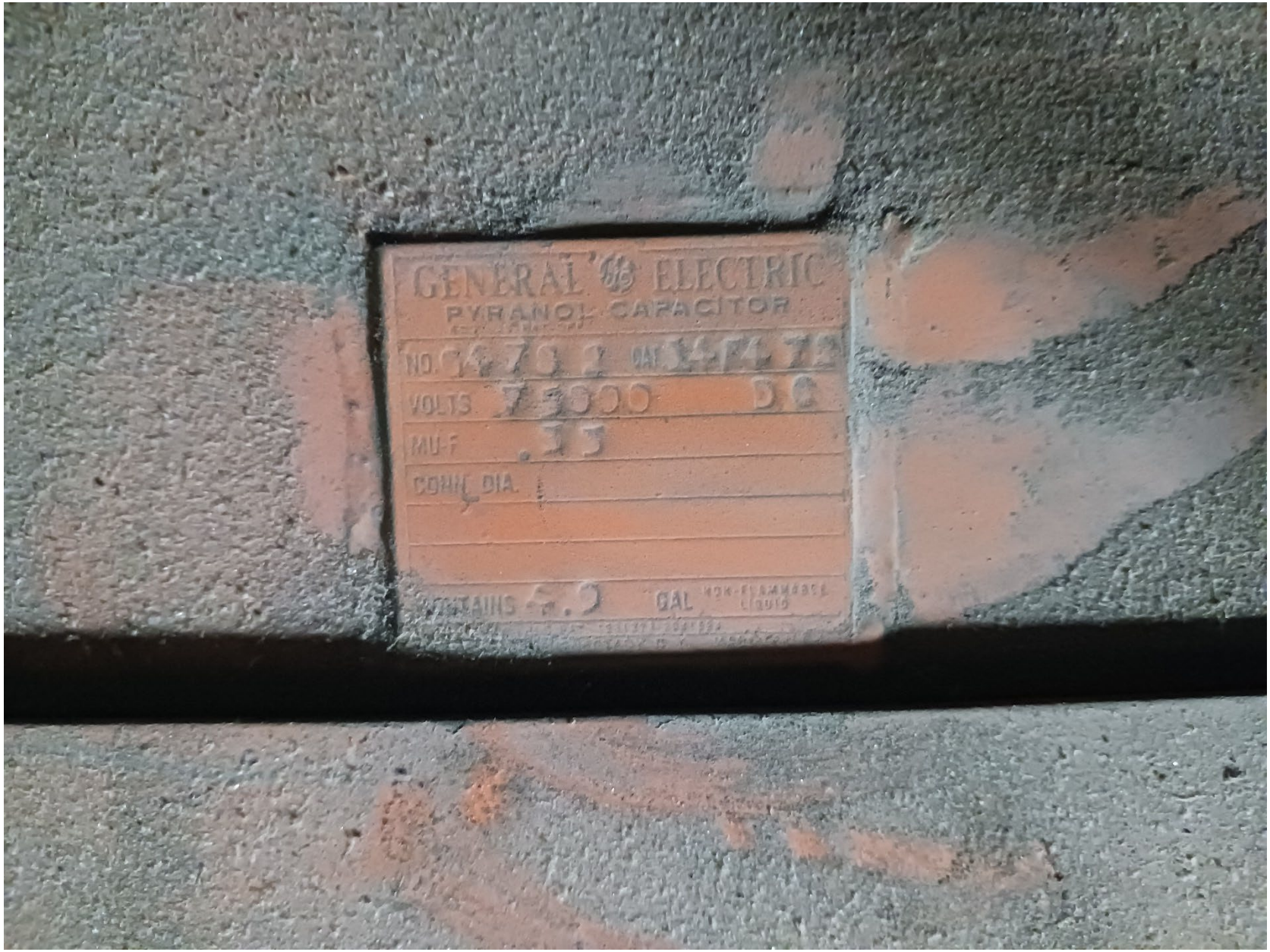

SERIAL NO: 16-1406
MODEL NO: 6CC130-2
WEIGHT: 185 LBS 84 kG
INPUT: 120 V 20 A 60 Hz 1ø
OUTPUT: 130/36 kV 15 mA 2/0.5 kVA
DUTY CYCLE: 2/0.5 kVA 5 MIN ON / 15 MIN OFF
MFG DATE: JANUARY 2017
TRANSFORM

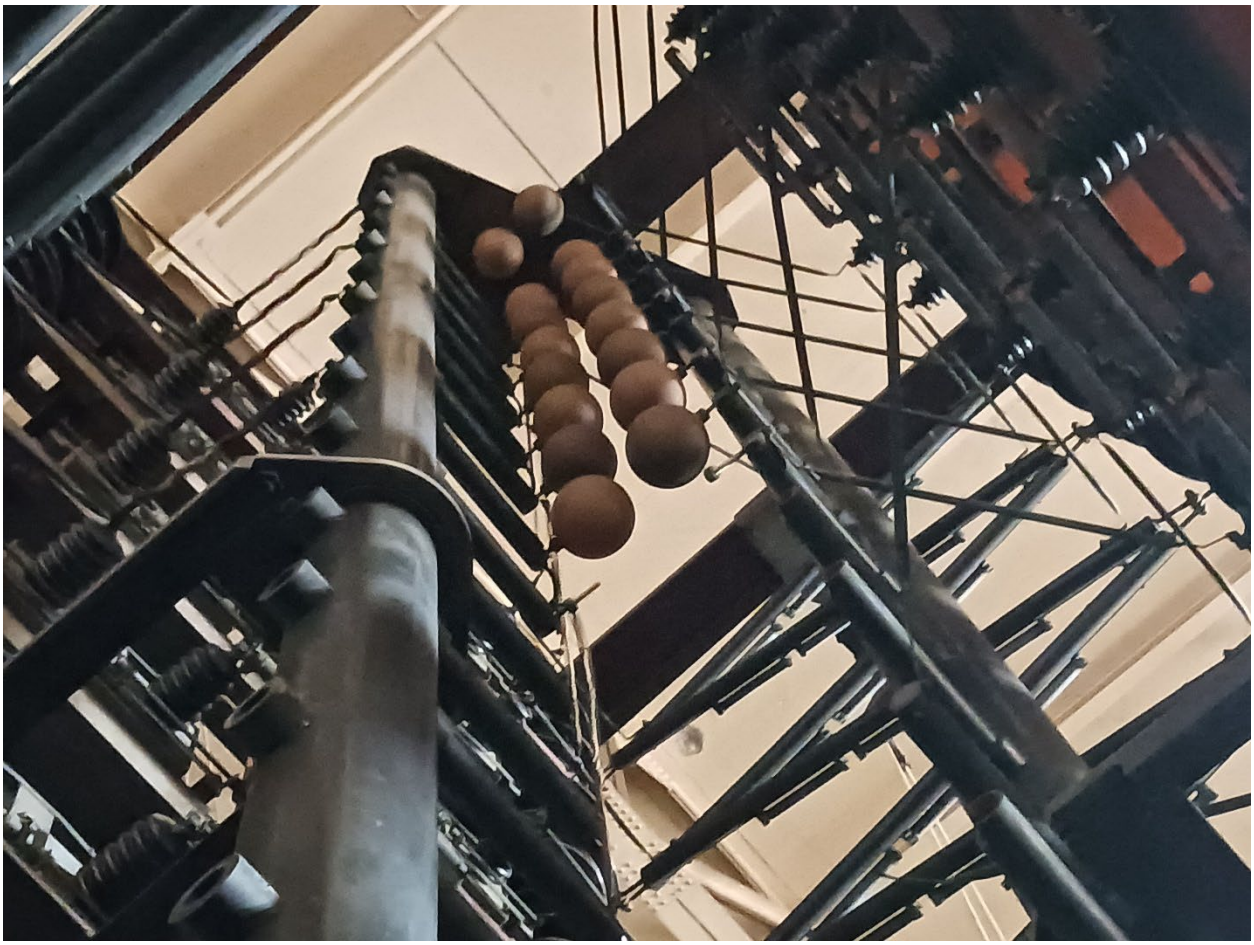


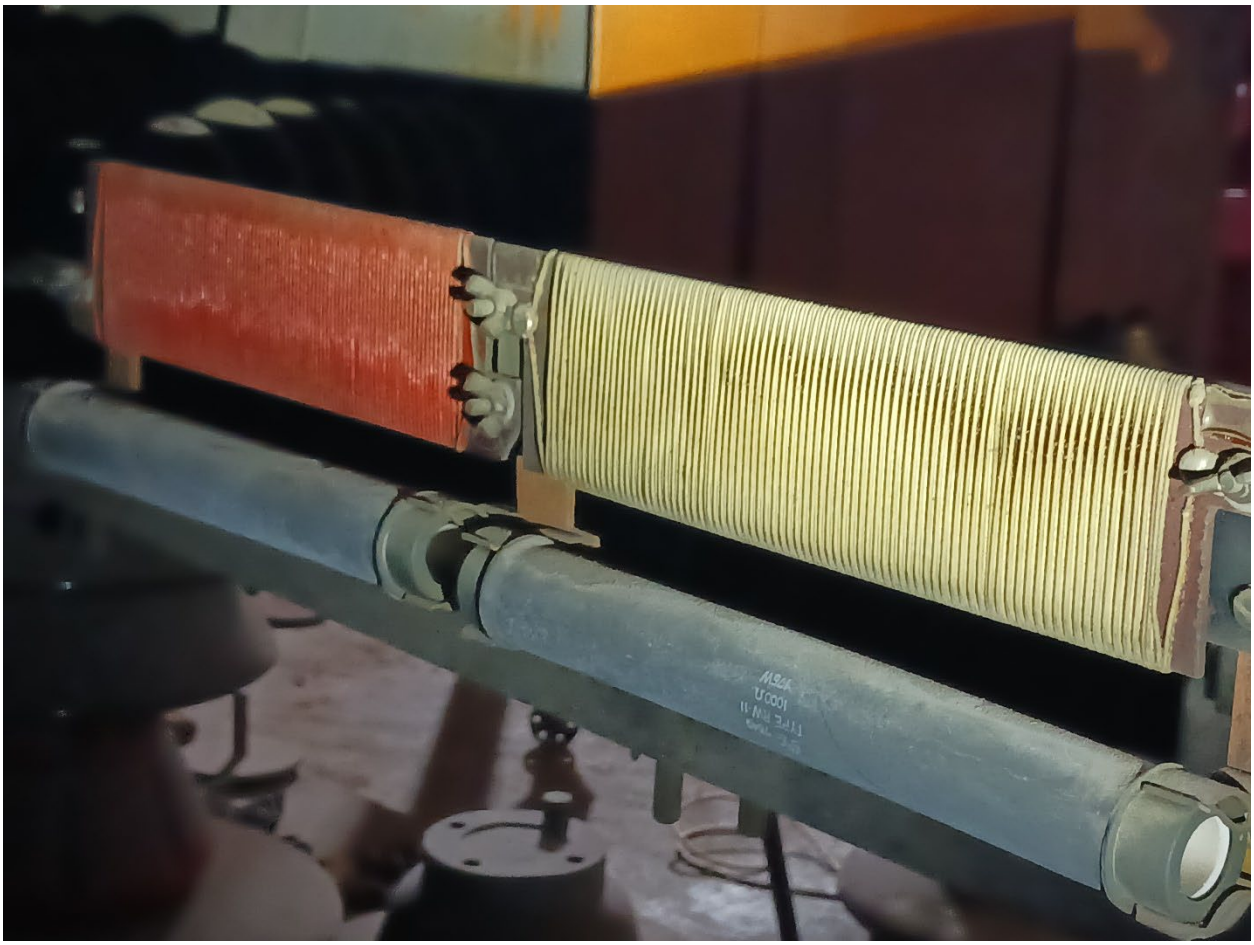


GENERAL ELECTRIC
PYRANOL CAPACITOR

GENERAL ELECTRIC
PYRANOL CAPACITOR


GENERAL ELECTRIC
PYRANOL CAPACITOR
VOLTS 7000 D.C
MU-F .33
CONT. DIA.
GAL



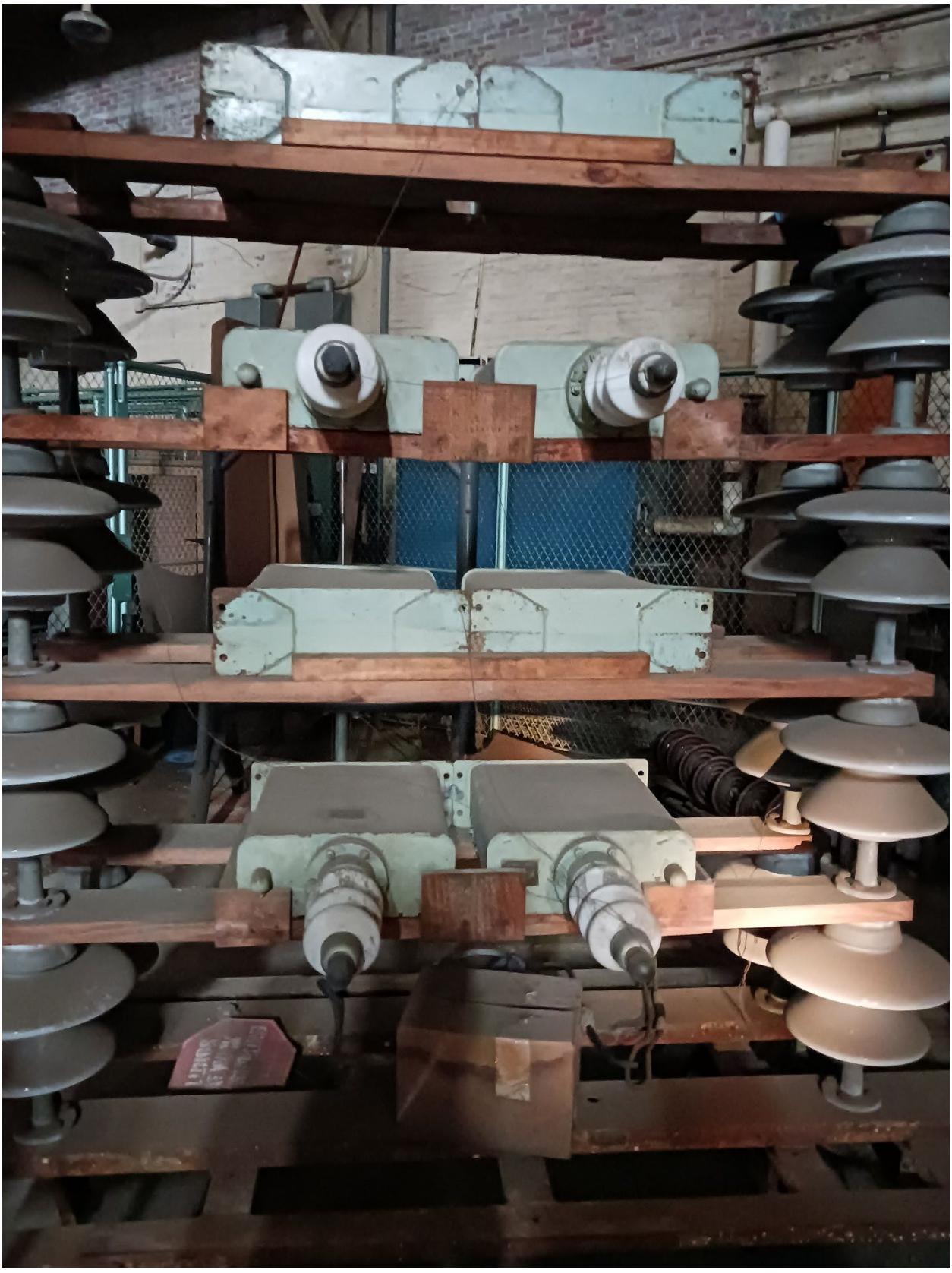


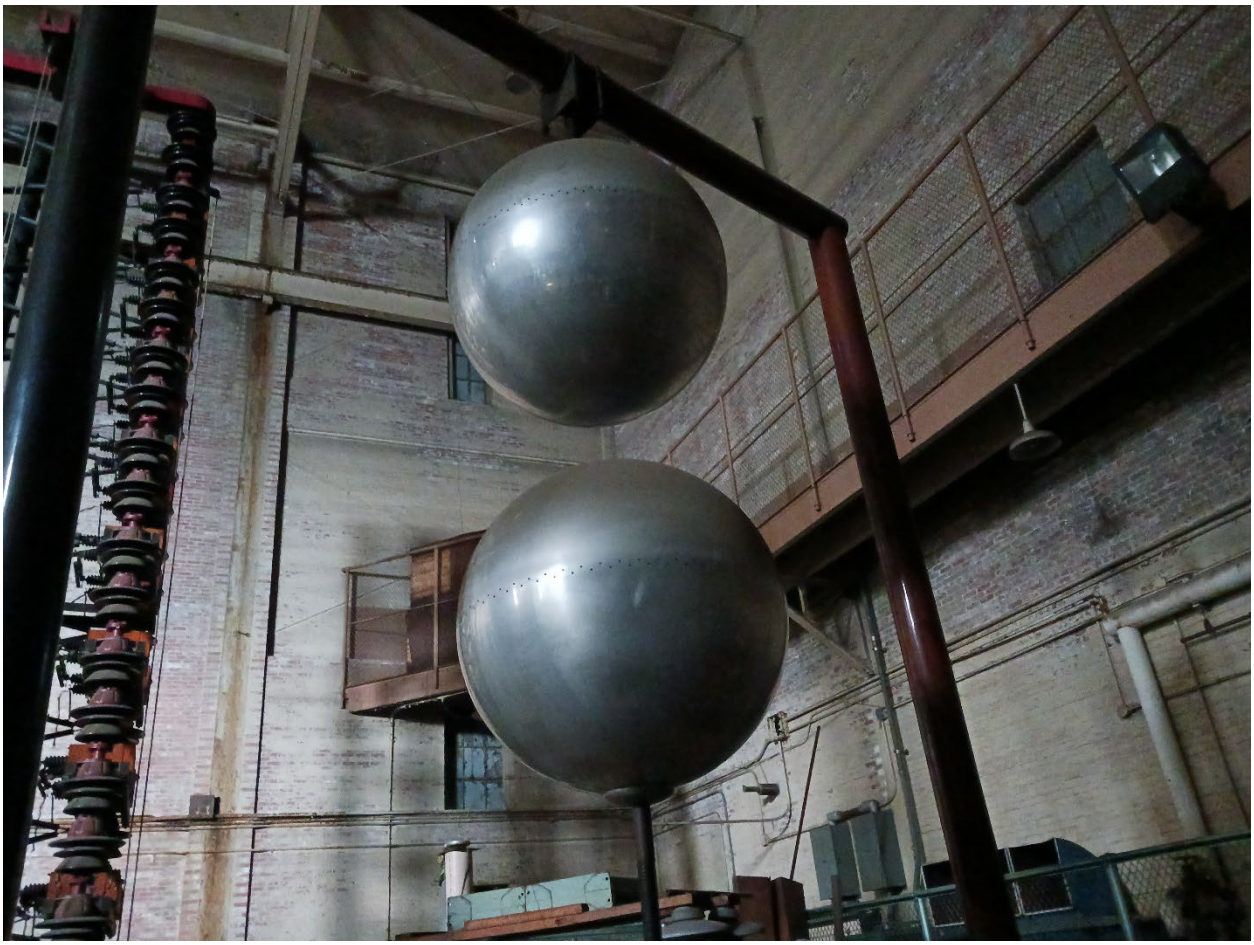
15K
175W

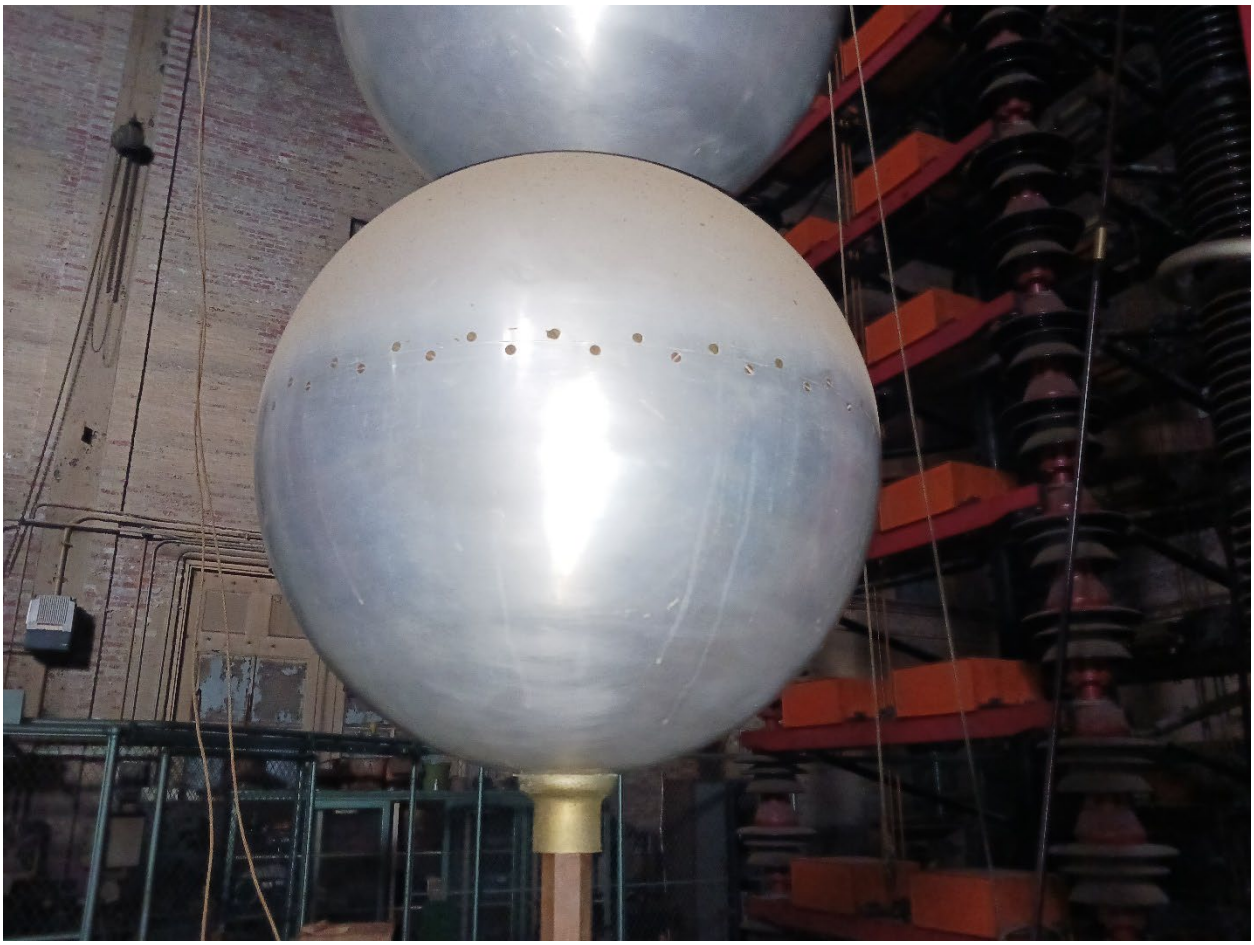
505
492

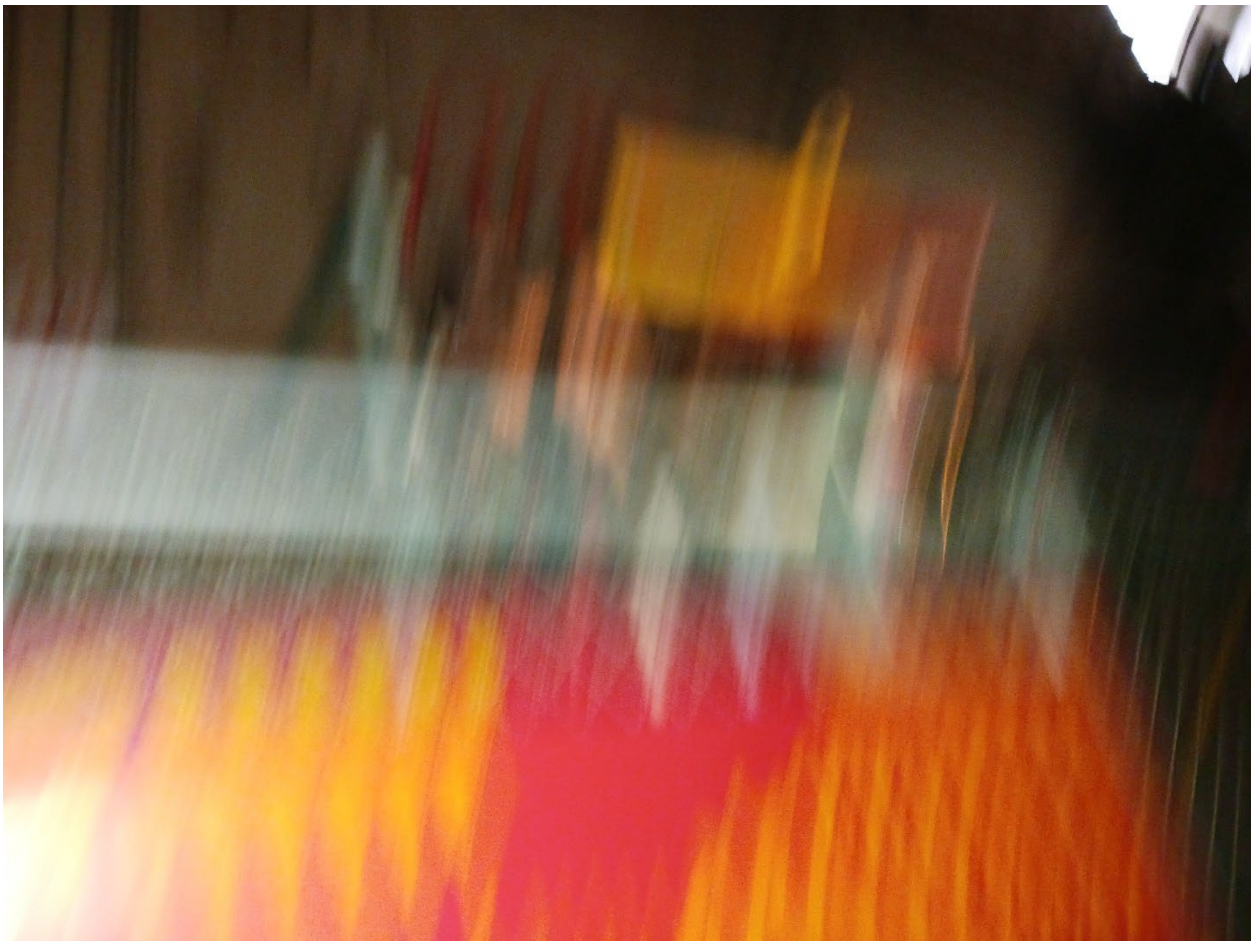
ALLEN
ALLEN HEAD
200

TYPE RW-II









DANGER
HIGH
VOLTAGE

Tycos Relative Humidity Tables

Temperature Readings in Degrees Fahrenheit. Relative Humidity Readings in Per Cent. Barometric Pressure 29.92 inches.

READINGS OF "DRY-BULB" THERMOMETER

DIFFERENCE BETWEEN READINGS OF "WET-BULB" AND "DRY-BULB" THERMOMETERS

"DRY-BULB"	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°
20°	83%	70%	55%	42%	26%	12%										
21°	85	71	56	42	28	15	1%									
22°	86	71	58	44	31	17	4									
23°	86	72	59	46	33	20	7									
24°	87	73	60	47	33	22	10									
25°	87	74	62	49	37	25	13									
26°	87	75	63	51	39	27	16									
27°	88	76	64	52	41	29	18									
28°	88	76	65	54	43	32	21									
29°	88	77	66	55	44	34	24									
30°	89	78	67	56	46	36	26									
31°	89	78	68	58	47	38	28									
32°	89	79	69	59	49	40	31									
33°	90	80	70	61	51	42	33									
34°	90	81	71	62	52	44	35									
35°	91	81	72	63	54	46	37									
36°	91	82	73	64	55	47	39									
37°	91	82	74	65	57	49	41									
38°	91	83	75	66	58	51	43									
39°	92	83	75	67	59	52	45									
40°	92	83	76	68	60	54	46	37	29	23	15	7				
41°	92	84	76	69	61	54	47	39	31	24	17	10	3%			
42°	92	85	77	69	62	55	48	40	33	26	19	12	5			
43°	92	85	77	70	63	56	48	42	35	28	21	14	8	1%		
44°	93	85	78	71	64	57	50	43	36	30	23	16	10	4		
45°	93	86	78	71	64	57	51	44	38	31	25	18	12	6		
46°	93	86	79	72	65	58	52	45	39	32	26	20	14	8	2%	
47°	93	86	79	73	66	59	53	46	40	34	28	22	16	10	4	
48°	93	86	79	73	66	60	54	47	41	35	29	23	18	12	7	1%
49°	93	86	80	73	67	61	54	48	42	36	31	25	19	14	9	3

"DRY-BULB"	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°
50°	93	87	80	74	67	61	55	49	43	38	32	27	21	16	10	5	2													
51°	94	87	81	75	68	62	56	50	45	39	34	28	23	17	12	7	4	1												
52°	94	87	81	75	69	63	57	51	45	40	35	29	24	19	14	9	6	3												
53°	94	88	81	76	69	63	58	52	47	41	36	31	26	21	16	12	8	5	2											
54°	94	88	82	76	70	64	59	53	48	42	37	32	27	22	17	14	10	7	4	1										
55°	94	88	82	76	70	65	59	54	49	43	38	33	28	23	19	16	12	9	6	3										
56°	94	88	82	77	71	65	60	55	50	44	39	34	30	25	20	17	14	11	8	5	2									
57°	94	88	82	77	71	66	61	55	50	45	40	35	31	26	22	18	15	13	10	7	4	1								
58°	94	88	83	77	72	66	61	56	51	46	41	36	32	28	24	20	17	14	11	8	6	3								
59°	94	89	83	78	72	67	62	57	52	47	42	38	33	29	25	22	18	16	13	10	7	5	2							
60°	94	89	83	78	73	68	63	58	53	48	43	39	34	30	26	23	21	17	14	11	9	6	3	1						
61°	94	89	84	78	73	68	63	59	54	49	44	40	35	31	27	24	22	18	15	13	10	7	5	2						
62°	94	89	84	79	74	69	64	59	54	50	45	41	36	32	28	25	23	19	16	14	11	8	6	3	1					
63°	94	89	84	79	74	69	64	60	55	50	46	42	37	33	29	26	24	20	17	15	12	9	7	4	2					
64°	95	90	84	79	74	70	65	60	56	51	47	43	38	34	30	27	25	21	18	16	13	10	8	5	3	1				
65°	95	90	85	80	75	70	66	61	57	52	48	44	39	35	31	28	26	22	19	17	14	11	9	6	4	2				
66°	95	90	85	80	75	71	66	62	57	53	48	45	40	36	32	29	27	23	20	18	15	12	10	7	5	3	1			
67°	95	90	85	80	76	71	67	62	58	53	49	45	41	37	33	30	28	24	21	19	16	13	11	8	6	4	2			
68°	95	90	85	80	76	71	67	63	58	54	50	46	42	38	34	31	29	25	22	20	17	14	12	9	7	5	3	1		
69°	95	90	85	81	76	72	67	63	59	55	51	47	43	39	35	32	30	26	23	21	18	15	13	10	8	6	4	2		
70°	95	90	86	81	77	72	68	64	59	55	51	48	44	40	36	33	31	27	24	22	19	16	14	11	9	7	5	3	1	
71°	95	90	86	81	77	72	68	64	60	56	52	48	45	41	37	34	32	28	25	23	20	17	15	12	10	8	6	4	2	
72°	95	91	86	82	77	73	69	65	61	57	53	49	46	42	38	35	33	29	26	24	21	18	16	13	11	9	7	5	3	1
73°	95	91	86	82	78	73	69	65	61	57	54	50	46	43	39	36	34	30	27	25	22	19	17	14	12	10	8	6	4	2
74°	95	91	86	82	78	74	69	65	61	58	54	50	47	43	40	37	35	31	28	26	23	20	18	15	13	11	9	7	5	3
75°	96	91	86	82	78	74	70	66	62	58	55	51	47	44	40	37	35	32	29	27	24	21	19	16	14	12	10	8	6	4
76°	96	91	87	82	78	74	70	66	62	59	55	51	48	44	41	38	36	33	30	28	25	22	20	17	15	13	11	9	7	5
77°	96	91	87	82	78	74	70	66	63	59	56	52	48	45	42	39	37	34	31	29	26	23	21	18	16	14	12	10	8	6
78°	96	91	87	83	79	75	71	67	63	60	56	53	49	46	43	40	38	35	32	30	27	24	22	19	17	15	13	11	9	7
79°	96	91	87	83	79	75	71	68	64	60	57	53	50	47	44	41	39	36	33	31	28	25	23	20	18	16	14	12	10	8

"DRY-BULB"	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
80°	96	91	87	83	79	75	72	68	64	61	57	54	50	47	44	41	38	35	32	29	26	24	21	18	16	13	11	8	6	4	2																	
82°	96	92	88	84	80	76	73	69	66	62	59	56	53	50	47	44	41	38	36	33	30	28	25	23	20	18	16	13	11	9	7	5	3	1																
84°	96	92	88	84	80	77	73	70	66	63	60	57	54	51	48	45	42	40	37	34	32	29	27	24	22	20	17	15	13	11	9	7	5	3	1															
86°	96	92	88	84	81	77	74	70	67	64	61	58	55	52	49	46	44	41	38	36	33	31	28	26	24	21	19	17	15	13	11	9	7	5	3	1														
88°	96	92	88	85	81	78	74	71	68	65	62	59	56	53	50	48	45	43	40	38	35	33	31	28	26	24	22	20	18	16	14	12	10	8	6	4	2													
90°	96	92	89	85	82	78	75	72	69	66	63	60	57	54	52	49	46	44	42	39	37	35	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	3	1											
92°	96	92	89	86	82	79	76	73	70	67	64	61	59	56	53	51	48	46	43	41	39	36	34	32	30	28	26	24	22	20	18	16	14	12	10	9	7	5	3	2										
94°	96	93	89	86	83	80	77	74	71	68	65	63	60	57	55	52	50	47	45	43	40	38	36	34	32	30	28	26	24	22	20	18	16	15	13	11	9	8	6	4	3	1								
96°	96	93	90	87	84	81	78	75	72	69	67	64	61	59	56	54	51	49	47	44	42	40	38	36	34	32	30	28	26	24	22	21	19	17	15	14	12	10	9	7	6	4	3	1						
98°	96	93	90	87	84	81	79	76	73	70	68	65	63	60	58	55	53	51	48	46	44	42	40	38	36	34	32	30	28	27	25	23	21	20	18	16	15	13	12	10	9	7	6	4	3	2				
100°	96	93	90	88	85	82	79	77	74	71	69	66	64	62	59	57	55	52	50	48	46	44	42	40	38	36	34	33	31	29	27	26	24	22	21	19	18	16	15	13	12	10	9	8	6	5	4	3	1	
102°	96	93	90	88	85	83	80	77	75	72	70	67	65	63	61	58	56	54	52	50	48	46	44	42	40	39	37	35	33	32	30	28	27	25	24	22	21	19	18	16	15	13	12	11	9	8	7	6	4	3
104°	97	93	90	87	85	82	80	78	75	73	71	68	66	64	62	60	58	56	54	52	50	48	46	45	43	41	40	38	36	35	33	32	30	29	27	26	25	23	22	21	19	18	17	16	14	13	12	11	10	9
106°	97	93	90	87	85	83	80	78	76	74	71	69	67	65	63	61	59	57	56	54	52	50	48	47	45	44	42	41	39	38	36	35	33	32	31	29	28	27	26	24	23	22	21	20	19	18	17	16	15	14
108°	97	93	90	87	84	82	80	78	76	74	72	70	68	66	64	62	60	59	57	55	53	52	50	49	47	46	44	43	41	40	39	37	36	35	33	32	31	30	29	27	26	25	24	23	22	21	20	19	18	17
110°	97	93	90	87	84	82	80	78	76	74	72	70	68	67	65	63	61	60	58	56	55	53	52	50	49	47	46	45	43	42	41	39	38	37	36	35	33	32	31	30	29	28	27	26	25	24	23	22	21	20
112°	97	93	90	87	84	82	80	78	76	74	73	71	69	67	66	64	62	61	59	58	56	55	53	52	51	49	48	47	45	44	43	42	41	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23
114°	97	94	90	87	84	82	80	78	76	75	73	71	70	68	66	65	63	62	60	59	57	56	55	53	52	51	49	48	47	46	45	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
116°	97	94	91	88	85	82	80	78	76	75	73	72	70	69	67	66	64	63	62	60	59	58	56	55	54	53	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
118°	97	94	91	88	85	83	81	79	77	75	74	72	71	69	68	66	65	64	62	61	60	58	57	56	55	54	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29

Directions for Use of Relative Humidity Tables.

For Example:—

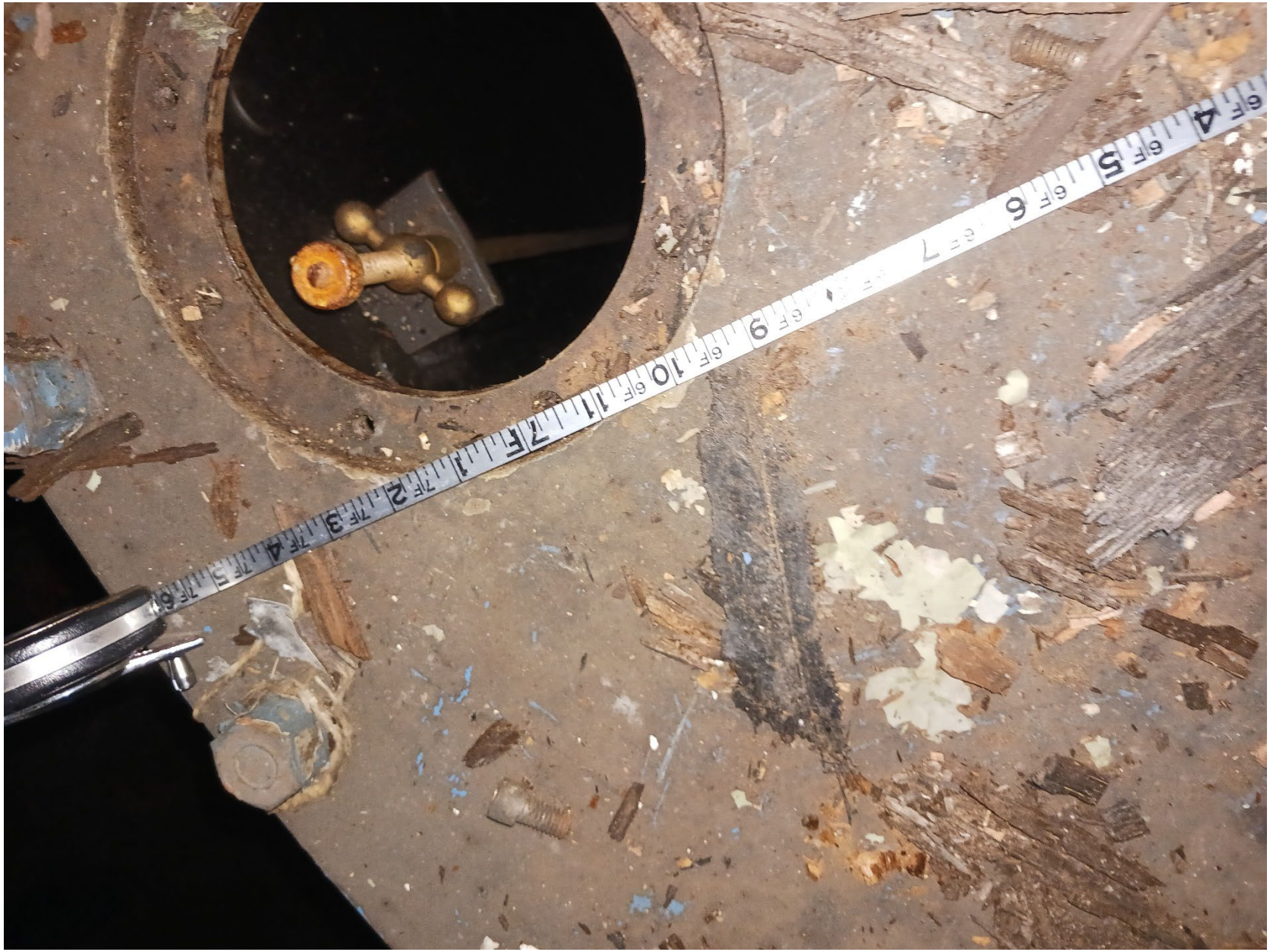
To find the Relative Humidity at 49° (39°) from the "Dry-Bulb" at 39°, subtract the reading from "Dry-Bulb" reading (49°), which gives a difference of 10°. Follow down the column headed (10°), where the two lines intersect.

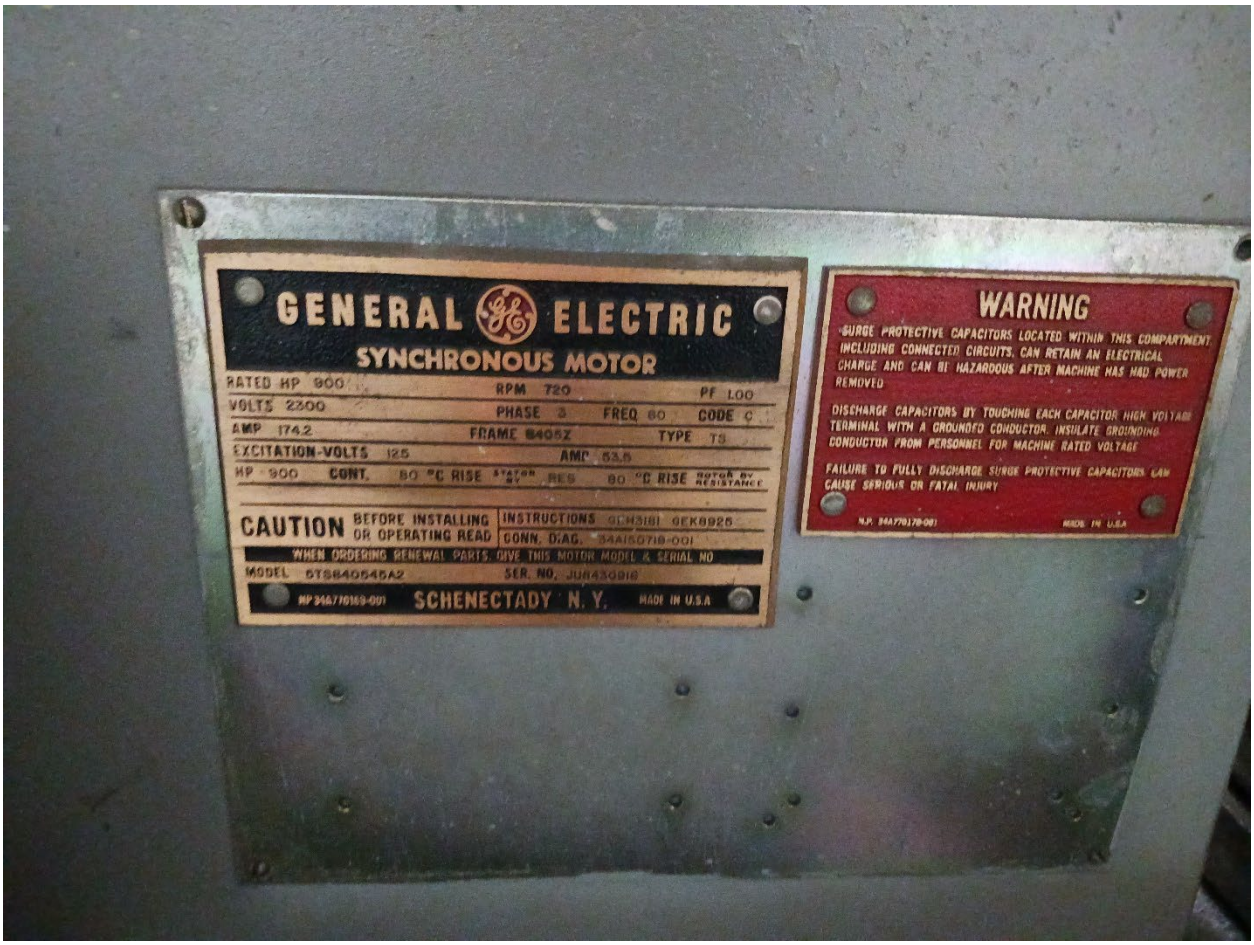
60 HZ. AIR SWITCH
R I V FACTORS
SMALL AREA 1.47
LARGE AREA 1.43
STOP
GENERATOR OIL SWITCH
GENERATOR FIELD RHEOSTAT
GENERATOR FIELD SWITCH
STOP
START

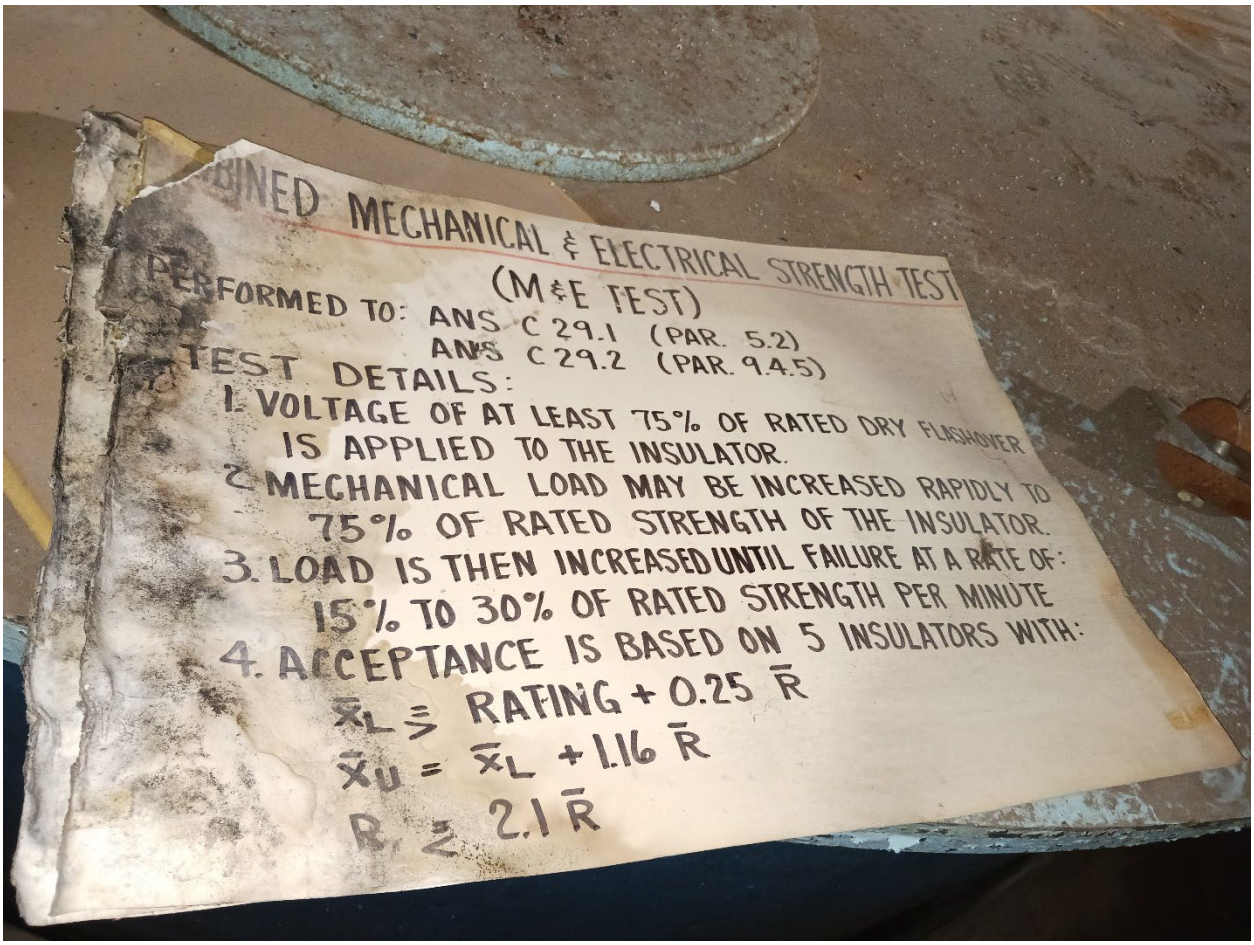
TRANSFORMER
TYPE K
FORM CEW
CYCLES 62.5
CIRCULAR COIL
H
DESIGN
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
HIGH VOLTAGE
FILM CUTOUT
CONNECTED TO TANK
HIGH VOLTAGE EXCITING COIL
CONNECT TO TANK
VOLTMETER COIL
GROUND
LOW VOLTAGE EXCITING COIL
LOW VOLTAGE COIL
CONNECT TANK AND COVER TO GROUND.
CAPACITY OF EXCITING WINDINGS 700 KV-A.
TO BE LIFTED WHEN UNTANKING 23000 POUNDS
WEIGHT OF TANK AND FITTINGS 5200 POUNDS
-CTRANSIL OIL 2300 GALLONS 16000 POUNDS
ATION APPROX. TOTAL WEIGHT 44200 POUNDS
INSTRUCTIONS GEI-3375
FOR INDOOR IN
GENERAL ELE RIC CO., U.S.A.

TYPE
FORM CEW
CYCLES 62.5
CIRCULAR MIL DESIGN
H
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
HIGH VOLTAGE
FILM CUTOUT
CONNECTED TO TANK
HIGH VOLTAGE EXCITING COIL
CONNECT TO TANK
VOLTMETER COIL
GROUND
LOW VOLTAGE EXCITING COIL
LOW VOLTAGE COIL
CONNECT TANK AND COVER TO GROUND.
CAPACITY OF EXCITING WINDINGS 700 KV-A.
TO BE LIFTED WHEN UNTANKING 23000 POUNDS
WEIGHT OF TANK AND FITTINGS 5200 POUNDS
APPROX. TOTAL WEIGHT 44200 POUNDS
INSTRUCTIONS GEI-3375
GENERAL ELECTRIC CO., U.S.A.

TRANSFORM
NO. 4286972 TYPE K FORM CEW
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
HIGH VOLTAGE CONNECTIONS
LINES ON VOLTS
1 AND 7 350000
VOLTMETER CONNECTIONS
LINES ON VOLTS HIGH VOLTAGE
3 AND 4 350 350000
2 AND 5 350 175000
LOW VOLTAGE CONNECTIONS
LINES ON VOLTS
8 AND 9 2300
1
10
6
7
8
9
2
3
4
5
GROUND
HIGH VOLTA
EXCITING CO
CONNECT
TO TANK
TO MEASURE CURRENT IN HIGH VOLTAGE CIRCUIT
CONNECT AMMETER TO NO. 6 AND NO. 7 AND INSERT
CIGARETTE PAPER UNDER SPRING OF FILM CUTOUT
MAXIMUM CURRENT OF VOLTMETER COIL IS ½ AM
OPERATION ONE HOUR 55°C.
APPROX. W
IMPEDANCE VOLTS
PERCENT
FOR INDOOR IN
CAUTION ! BEFORE INSTALLING OR OPERATIN
GENERAL EL
TO BE LIFTED
WEIGHT OF
INSTRUCTI


6F 4
6F 5
6F 6
6F 7
6F 9
6F 10
6F 11
7F 1
7F 2
7F 3
7F 4
7F 5
7F 6


GENERAL ELECTRIC
SYNCHRONOUS MOTOR
RATED HP 900
RPM 720
PF 1.00
VOLTS 2300
PHASE 3
FREQ 60
CODE G
AMP 174.2
FRAME 8405Z
TYPE TS
EXCITATION-VOLTS 125
AMP 53.5
HP 900 CONT. 80 °C RISE STATOR BY RES 80 °C RISE ROTOR BY RESISTANCE
CAUTION BEFORE INSTALLING OR OPERATING READ
INSTRUCTIONS GEH3181 GEK8925
CONN. DIAG. 344150718-001
WHEN ORDERING RENEWAL PARTS GIVE THIS MOTOR MODEL & SERIAL NO
MODEL 5TS8405A52
SER. NO. JU843916
MP 344776169-001
SCHENECTADY N. Y.
MADE IN U.S.A
WARNING
SURGE PROTECTIVE CAPACITORS LOCATED WITHIN THIS COMPARTMENT INCLUDING CONNECTED CIRCUITS, CAN RETAIN AN ELECTRICAL CHARGE AND CAN BE HAZARDOUS AFTER MACHINE HAS HAD POWER REMOVED
DISCHARGE CAPACITORS BY TOUCHING EACH CAPACITOR HIGH VOLTAGE TERMINAL WITH A GROUNDED CONDUCTOR. INSULATE GROUNDING CONDUCTOR FROM PERSONNEL FOR MACHINE RATED VOLTAGE
FAILURE TO FULLY DISCHARGE SURGE PROTECTIVE CAPACITORS CAN CAUSE SERIOUS OR FATAL INJURY
M.P. 344778178-001
MADE IN U.S.A



BINED MECHANICAL & ELECTRICAL STRENGTH TEST

(M&E TEST)

PERFORMED TO: ANS C 29.1 (PAR. 5.2)
ANS C 29.2 (PAR. 9.4.5)

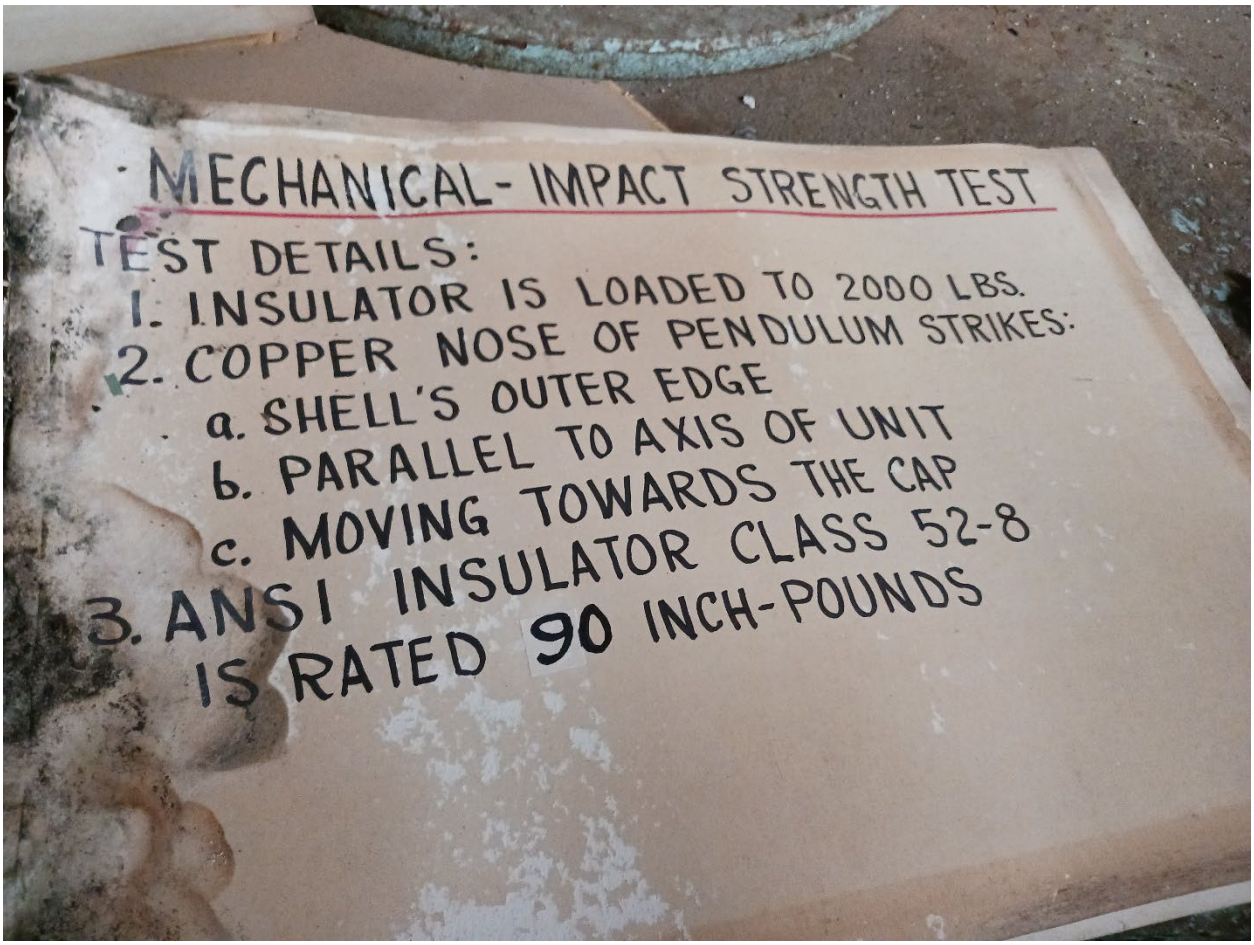
TEST DETAILS:

1. VOLTAGE OF AT LEAST 75% OF RATED DRY FLASHOVER IS APPLIED TO THE INSULATOR.
2. MECHANICAL LOAD MAY BE INCREASED RAPIDLY TO 75% OF RATED STRENGTH OF THE INSULATOR.
3. LOAD IS THEN INCREASED UNTIL FAILURE AT A RATE OF: 15% TO 30% OF RATED STRENGTH PER MINUTE
4. ACCEPTANCE IS BASED ON 5 INSULATORS WITH:

$\bar{X}_L \geq$ RATING + 0.25 $\bar{R}$

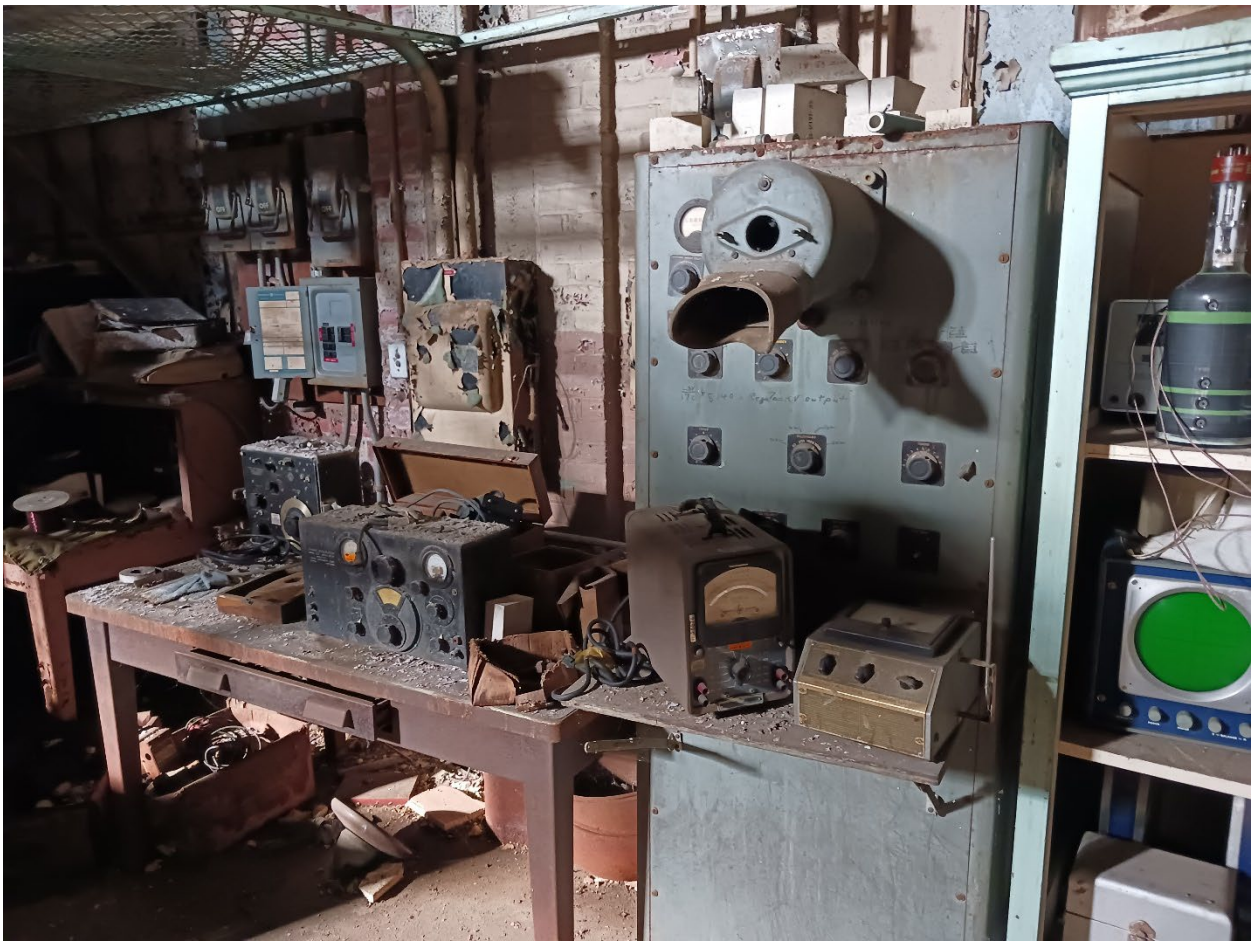
$\bar{X}_U = \bar{X}_L + 1.16\,\bar{R}$

$R \leq 2.1\,\bar{R}$


MECHANICAL- IMPACT STRENGTH TEST
TEST DETAILS:
1. INSULATOR IS LOADED TO 2000 LBS.
2. COPPER NOSE OF PENDULUM STRIKES:
a. SHELL'S OUTER EDGE
b. PARALLEL TO AXIS OF UNIT
c. MOVING TOWARDS THE CAP
3. ANSI INSULATOR CLASS 52-8
IS RATED 90 INCH-POUNDS

Quality Control
of
Insulators
Progress Is Our Most Important Product

CHECKING
the Formed Insulator Shell
HEAD DIMENSION
HEAD THICKNESS
WALL THICKNESS



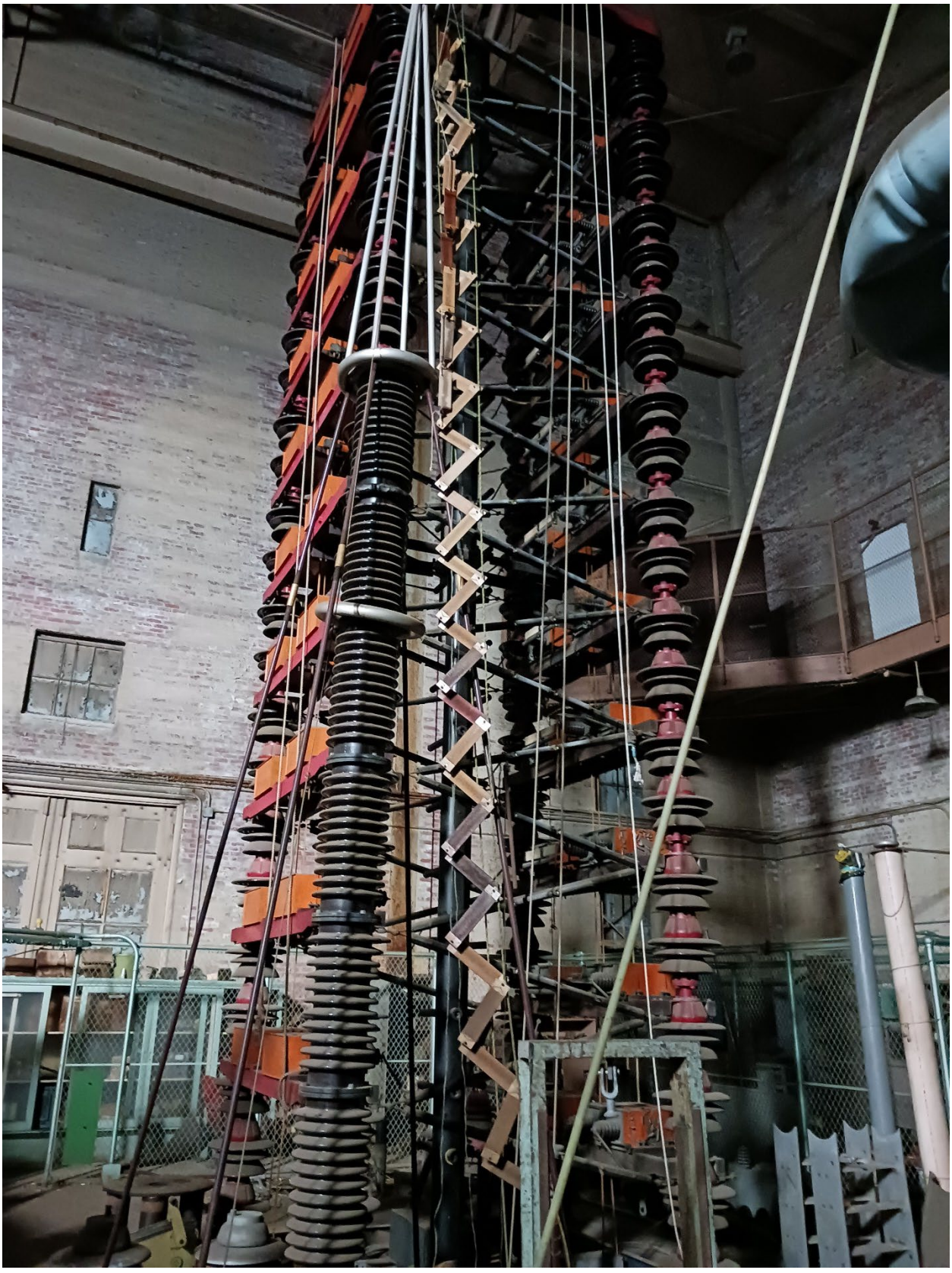
BLH Shinkoh
Model PSD 702
S/N 3620069

T&B
ENGINEERED
T&B
ENGINEERED
INCORPORATED

THOMAS & BETTS Co.
INCORPORATED
T&B
ENGINEERED
T&B
ENGINE

直流用OF式蓄電器
KV
KV

直流用OF式蓄電器
日新電機
株式会社

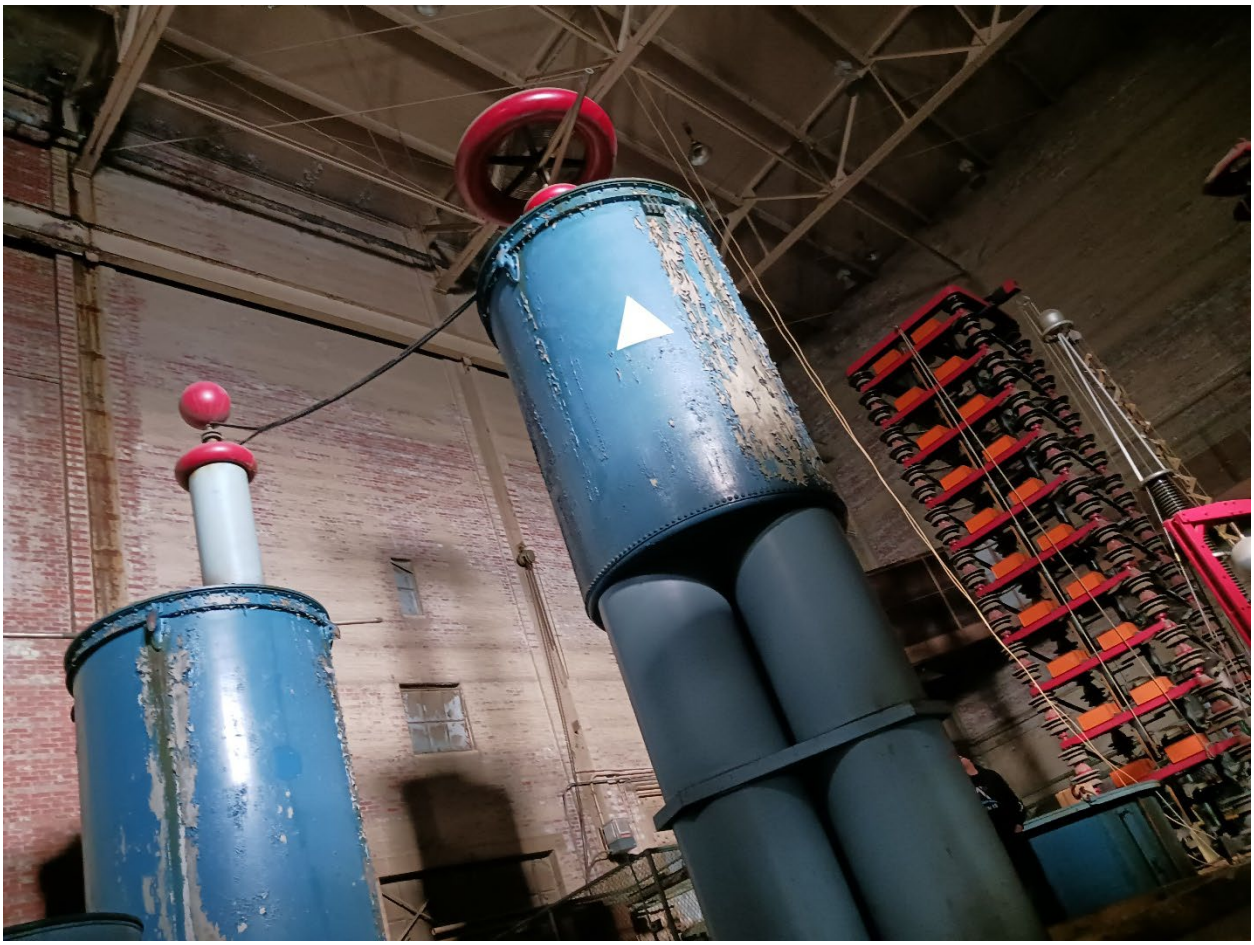


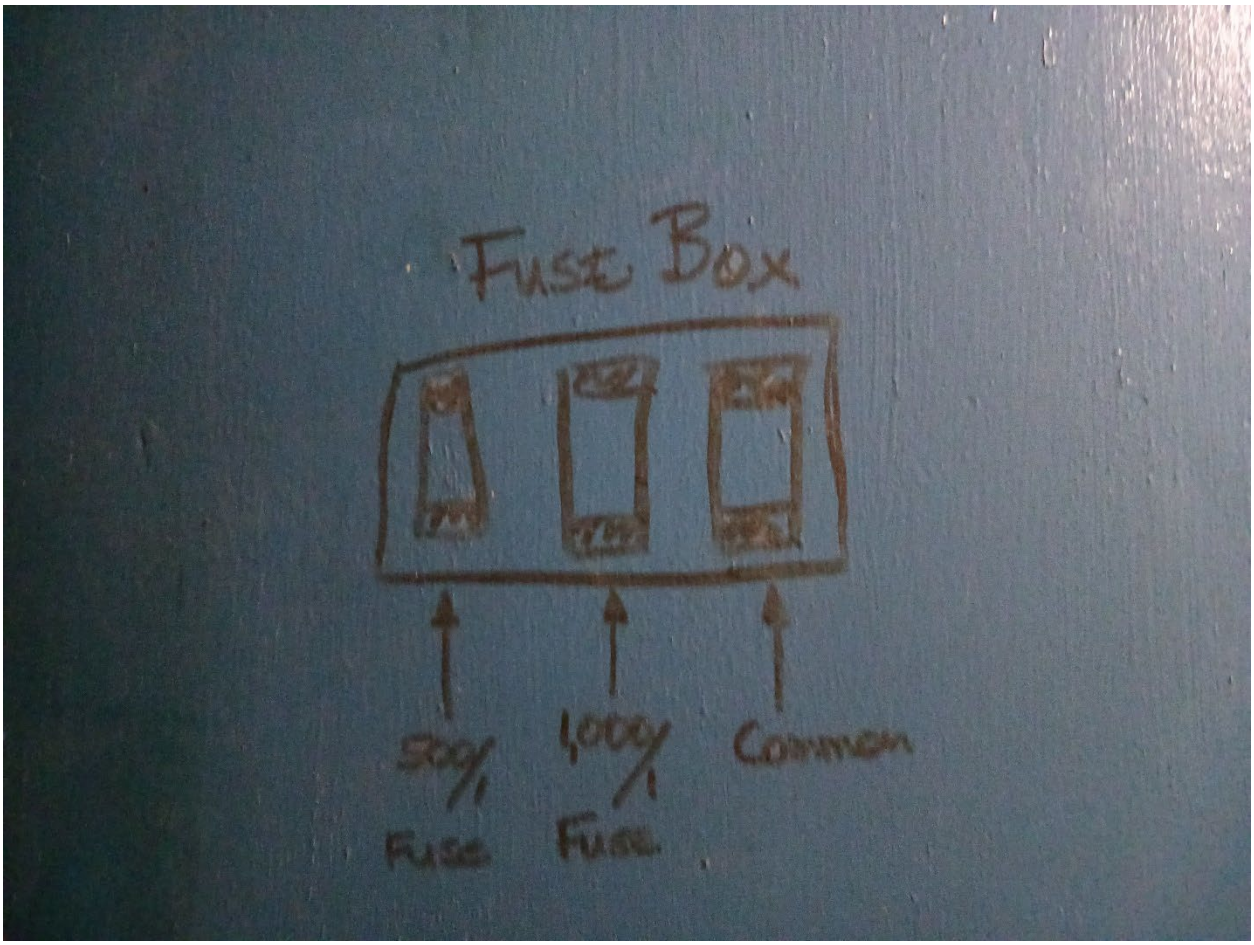
Dutch Master

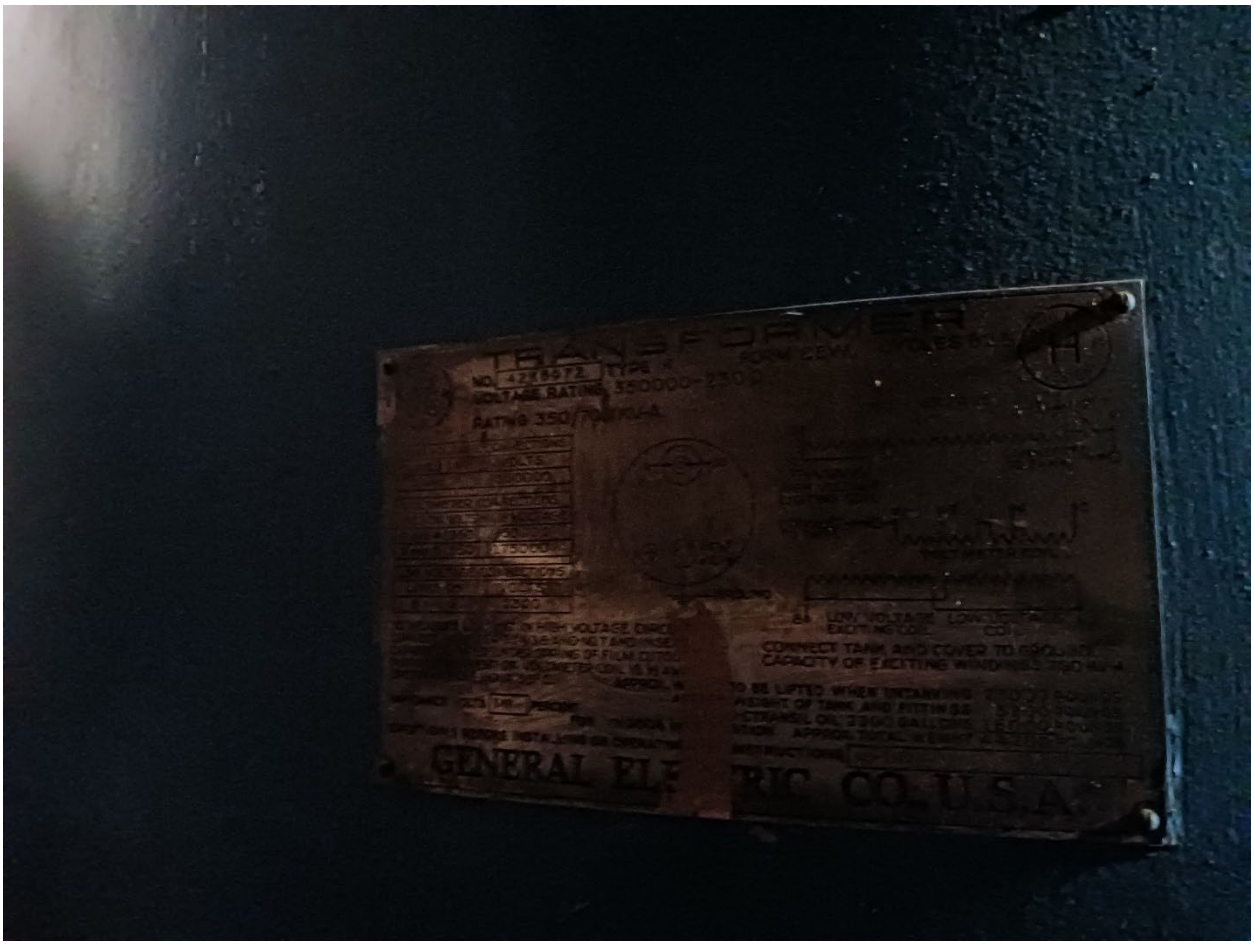
Dutch Masters

200
210
110V 200 3

20

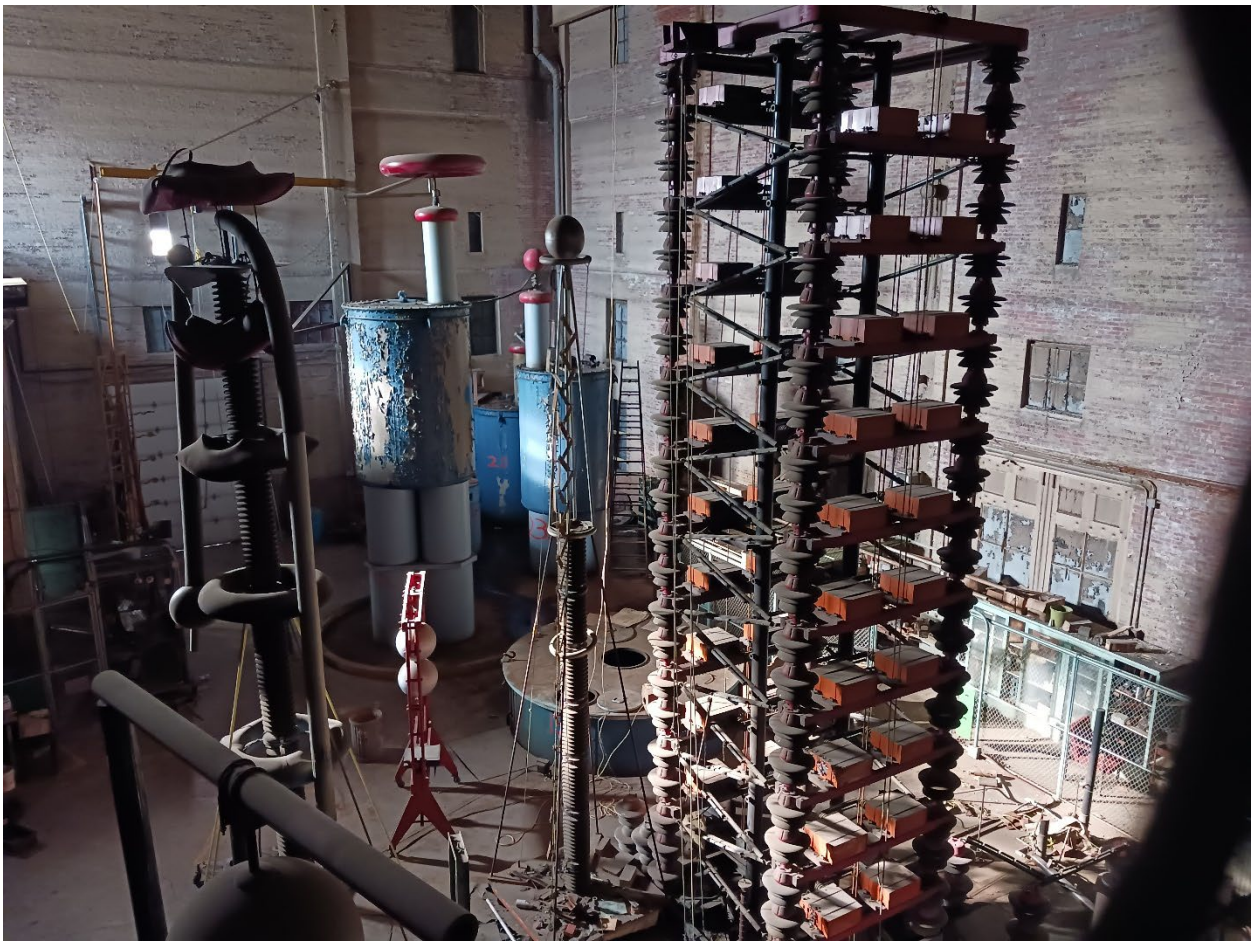



Fuse Box
Common


GENERAL EL
RIC CO. U.S.A.

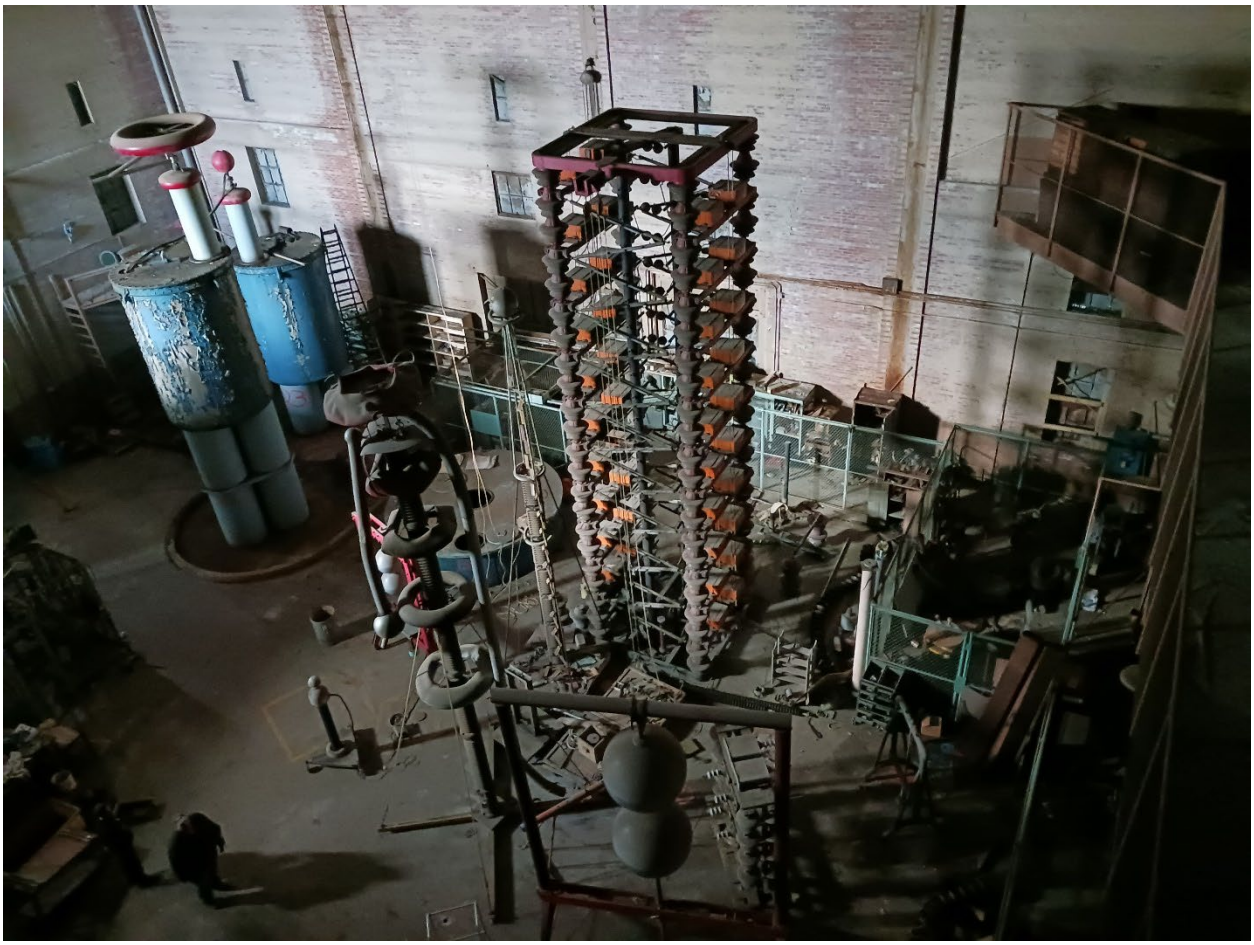
TRANSFORMER
TYPE K
FORM CEW
CYCLES 62.5
CIRCULAR MIL
H
DESIGN
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
HIGH VOLTAGE
FILM CUTOUT
CONNECTED TO TANK
HIGH VOLTAGE EXCITING COIL
CONNECT TO TANK
VOLTMETER COIL
GROUND
EXCITING COIL
LOW VOLTAGE COIL
CONNECT TANK AND COVER TO GROUND.
CAPACITY OF EXCITING WINDINGS 700 KV-A.
TO BE LIFTED WHEN UNTANKING 23000 POUNDS
WEIGHT OF TANK AND FITTINGS 5200 POUNDS
-CTRANSIL OIL 2300 GALLONS 16000 POUNDS
ATION APPROX. TOTAL WEIGHT 44200 POUNDS
INSTRUCTIONS GEI-3375
VOLTAGE CONNECTIONS
LINES ON VOLTS
1 AND 7 350000
METER CONNECTIONS
LINES ON VOLTS HIGH VOLTAGE
3 AND 4 350 350000
2 AND 5 350 175000
LOW VOLTAGE CONNECTIONS
LINES ON VOLTS
8 AND 9 2300
TO MEASURE CURRENT IN HIGH VOLTAGE CIRCUIT
CONNECT AMMETER TO NO. 6 AND NO. 7 AND INSERT
CIGARETTE PAPER UNDER SPRING OF FILM CUTOUT
MAXIMUM CURRENT OF VOLTMETER COIL IS ½ AM
OPERATION ONE HOUR 55°C.
APPROX. W
APPROX
IMPEDANCE VOLTS PERCENT
FOR INDOOR IN
CAUTION! BEFORE INSTALLING OR OPERATING
GENERAL ELE
TRIC CO., U.S.A.

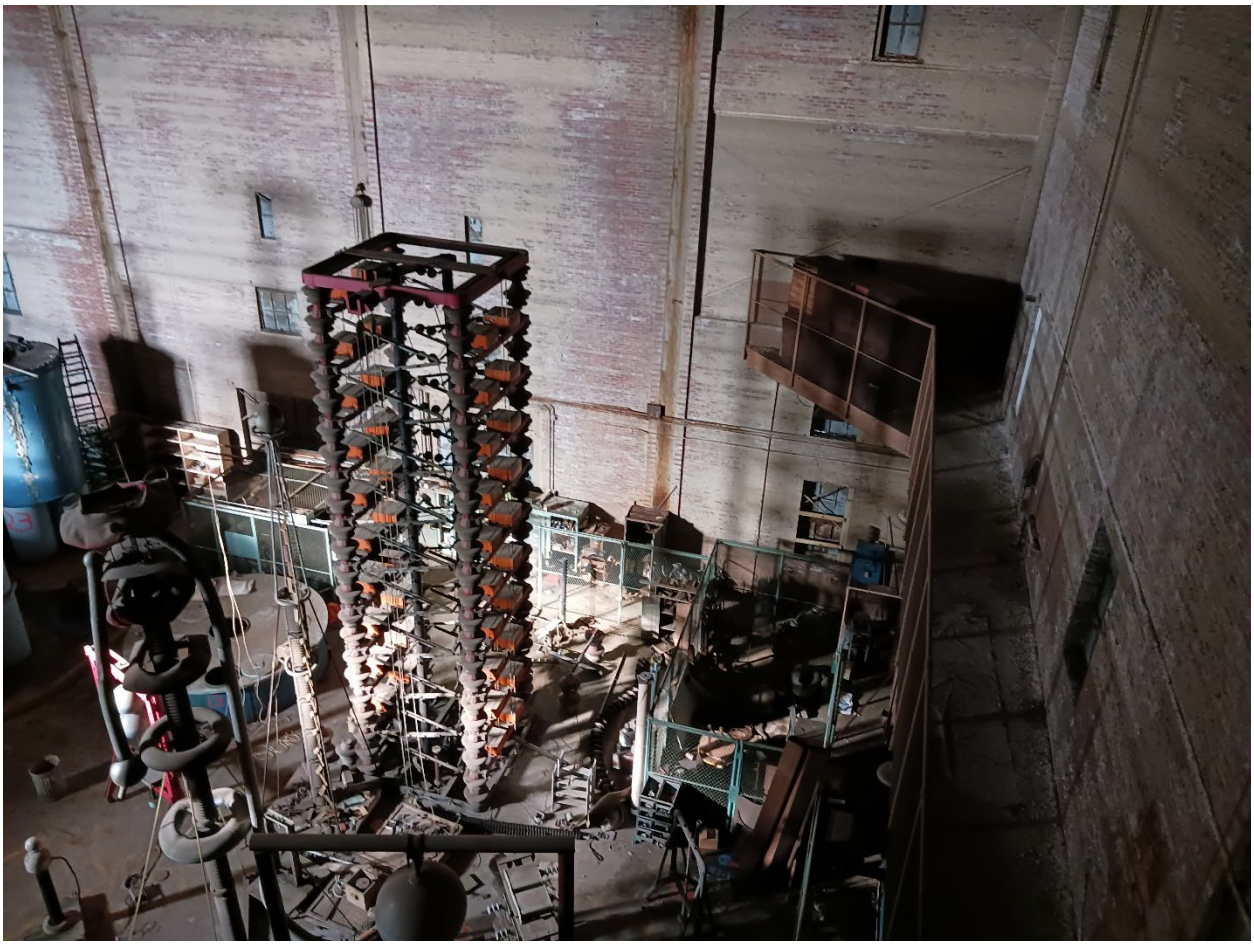
TRANSFORMER
TYPE K
FORM CEW
CYCLES 62.5
CIRCULAR
H
DESIGN
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
HIGH VOLTAGE
FILM CUTOUT
CONNECTED TO TANK
HIGH VOLTAGE EXCITING COIL
CONNECT TO TANK
VOLTMETER COIL
GROUND
LOW VOLTAGE COIL
LOW VOLTAGE COIL
HIGH VOLTAGE CONNECTIONS
LINES ON VOLTS
1 AND 7 350000
VOLTMETER CONNECTIONS
LINES ON VOLTS HIGH VOLTAGE
3 AND 4 350 350000
2 AND 3 350 175000
LOW VOLTAGE CONNECTIONS
LINES ON VOLTS
8 AND 9 2300
CONNECT TANK AND COVER TO GROUND.
CAPACITY OF EXCITING WINDINGS 700 KV-A.
TO BE LIFTED WHEN UNTANKING 23000 POUNDS
WEIGHT OF TANK AND FITTINGS 5200 POUNDS
-CTRANSIL OIL 2300 GALLONS 16000 POUNDS
ATION APPROX. TOTAL WEIGHT 44200 POUNDS
INSTRUCTIONS GEI-3375
IMPEDANCE VOLTS PERCENT
FOR INDOOR IN
CAUTION ! BEFORE INSTALLING OR OPERATING
GENERAL EL TRIC CO., U.S.A.

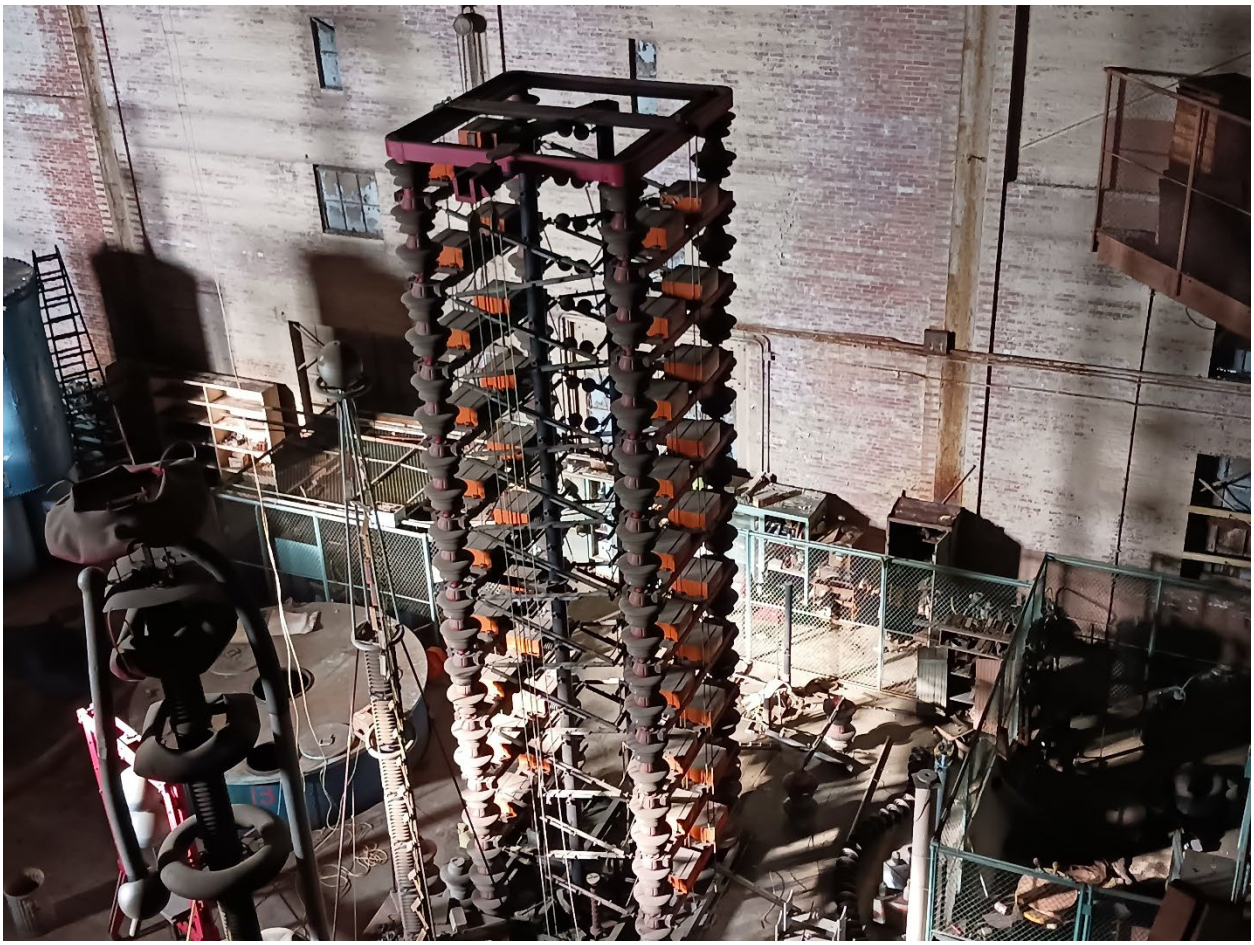


OHMITE
VITREOUS ENAMELED R
OHMITE

TRANSFILE
TRANSFILE
TRANSFILE
TRANSFILE
TRANSFILE

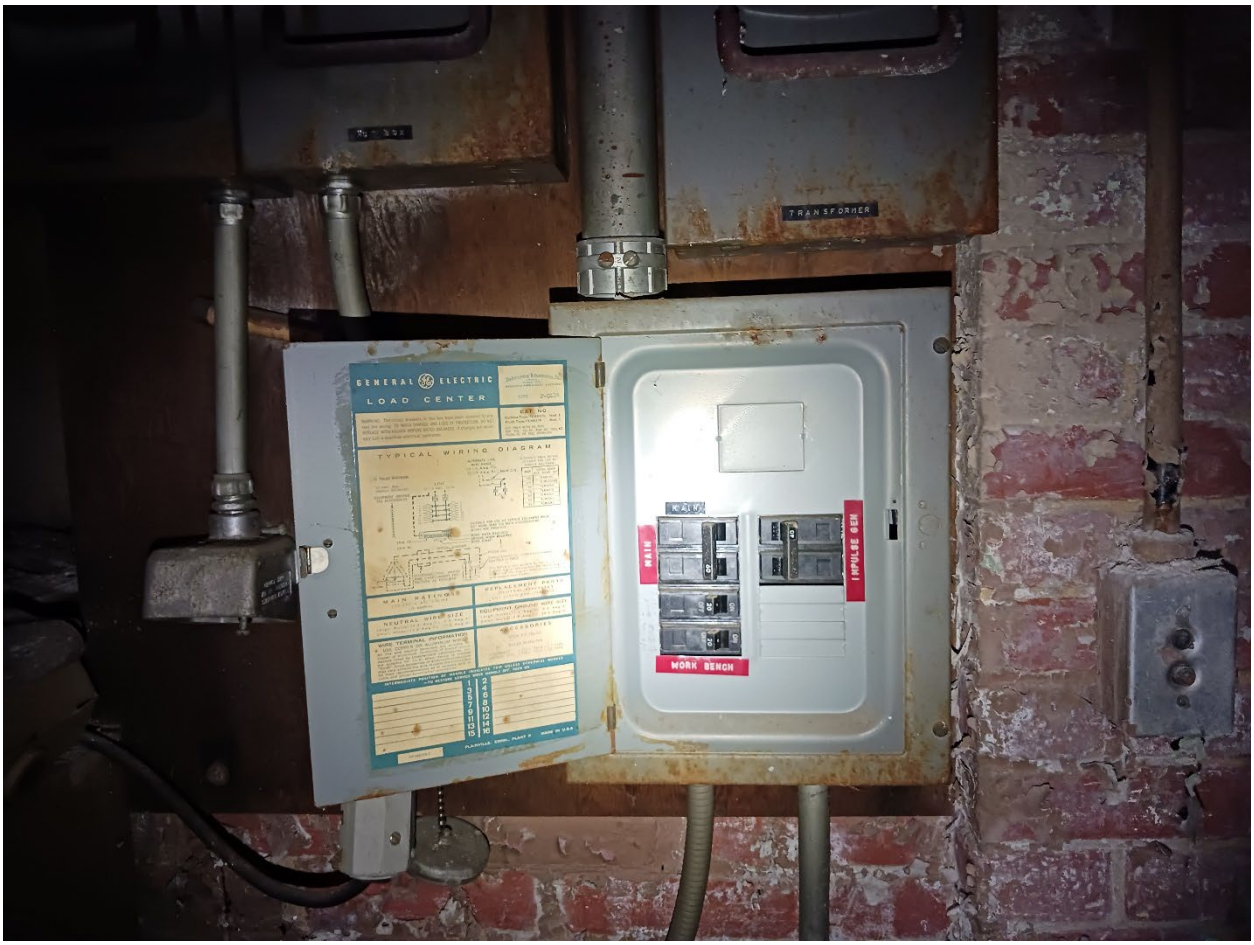






SYNCHRONOUS MOTOR
THE R.W. CRAMER CO., INC.
CENTERBROOK, CONN. U.S.A.
TIMER
GAPS
10A

KEV
SPHERE GAP SPACING


TRANSFORMER
GENERAL ELECTRIC
LOAD CENTER
TYPICAL WIRING DIAGRAM
MAIN
WORK BENCH

OFF
ON
OFF
ON
OFF
GENERAL ELECTRIC
LOAD CENTER

ENCLOSED
ELECTRIC SWITCH
30 AMP.
500 VOLTS A.C.
3 POLE
CAT. NO. 40351
TYPE "C"
THE TRUMBULL
ELECTRIC
MFG. CO.
ON
OFF

OFF
VOLTAGE DIVIDER
Regulated KV output

High Voltage Laboratory Control and Special Tests

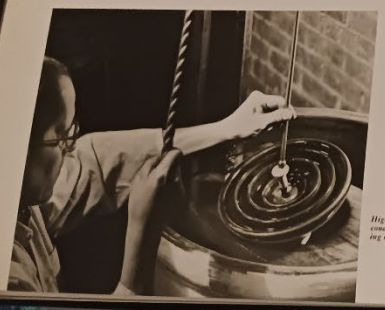
Each day, a quantity of samples of production insulators, selected at random, goes to the high voltage laboratory for a series of control tests. These standard tests enable our engineers to keep continuous control charts of mechanical and electrical strength and assure our customers of full dependability in insulator service.

MECHANICAL AND ELECTRICAL TEST

Here, insulators (such as the one at the lower right, above) suffer a destructive pull test under electrical load. Nature of failure, ultimate values and other pertinent data serve as basis for analysis and provide a continuous performance record.

IMPACT TEST

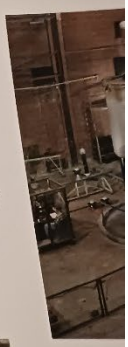
The impact test subjects samples to hammer blows of increasing severity. The results prove the capability of production insulators to withstand mechanical shocks during installation and service.



PUNCTURE TEST

High and unvarying dielectric strength is essential in suspension insulators. To conduct this test, it is necessary to prevent external flashover. Immersed in insulating oil, the unit is subjected to increasing voltage until puncture occurs.

Progress Is Our Most Important Product



IMPULSE FLASHOVER

This discharge, flashing across the insulators at about 600,000 Volts, measures the string's resistance to natural lightning. This standard test is used in establishing the characteristics of new insulators; so important to the designer of transmission lines.

This high
mechanic
the right
frequenc
tests, ar
staffed
engine
means

LOW FREQUENCY FLASHOVER

The 60-cycle dry flashover of this insulator string requires about 400,000 Volts. From such tests, we can evaluate the ability of an insulator design to withstand voltages to be met in service. To estimate characteristics in rain and fog, similar tests are conducted under a controlled water spray.

aboratory Control and Special Tests

Each day, a quantity of samples of production insulators, selected at random, goes to the high voltage laboratory for a series of control tests. These standard tests enable our engineers to keep continuous control charts of mechanical and electrical strength and assure our customers of full dependability in insulator service.

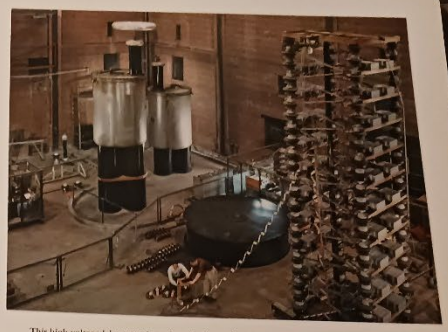
IMPACT TEST

...suspension insulators. To ...hover. Immersed in insulat... ...puncture occurs.

...ss Is Our Most Important Product

IMPULSE FLASHOVER

The discharge flashing across the insulators at about 650,000 Volts, measures the string's resistance to natural lightning. ...of new insulators, is important to the designer of transmission lines.



This high voltage laboratory is equipped with modern facilities for the evaluation of electrical and mechanical characteristics of today's insulators and of tomorrow's designs. The impulse generator at the right has a capacity of 3 million volts, and can produce extremely steep wave fronts. Low frequency test potentials up to 1 million volts, as required for flashover, puncture and radio noise tests, are delivered by the transformers seen in the left background. In addition, the laboratory is staffed and equipped to handle the great variety of tests and investigations required by development, engineering and manufacturing activities. These facilities, as those for research and design, are our means for the solution of your high voltage insulation problems.

LOW FREQUENCY FLASHOVER

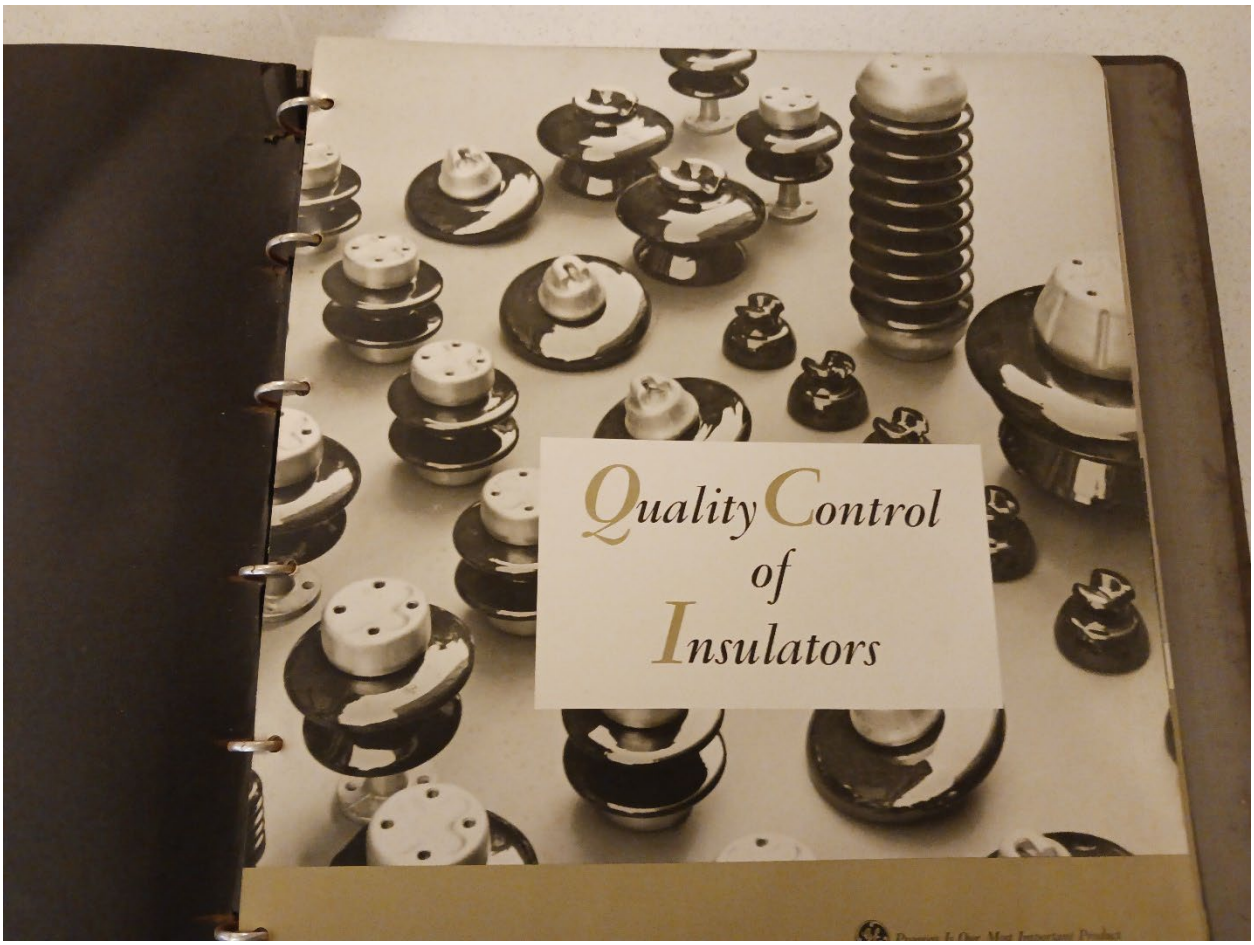
The 60-cycle dry flashover of this insulator string requires about 400,000 Volts. From such tests, we can evaluate the ability of an insulator design to withstand voltages to be met in service. To estimate characteristics in rain and fog, similar tests are conducted under a controlled water spray.

TIME LOAD FRAME

An accelerated life test gives a high measure of the performance to be realized in service. The insulators are loaded in excess of normal service stress for periods ranging up to many years. Low frequency flashover tests check the continued electrical integrity of each unit.

THERMAL SHOCK TEST

Alternate submersion of insulators in freezing and boiling water goes far beyond normal service conditions under which units are suddenly heated or cooled. Absence of cracks or electrical failure after ten of these severe thermal shock cycles indicates highest porcelain quality.


Quality Control
of
Insulators

General Electric Laboratories lead in Insulator Research and Development

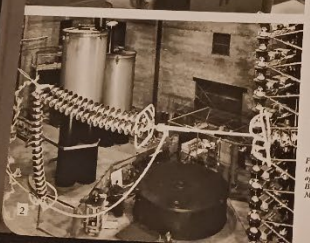
Metallurgy and Ceramics Building, General Electric Research Laboratory, The Knolls, Schenectady, New York

The General Engineering Laboratory, in Schenectady, New York, is the birthplace of the development of new insulators.

Quality Control

Testing insulators in the High Voltage Laboratory, Pittsfield, Massachusetts.

The Ceramic Development Laboratory, Baltimore, Maryland



Flashover test at the High Voltage Laboratory, Baltimore, Maryland

When you order suspension insulators for your lines, what do you expect of them?

You want them to be rugged and strong…withstanding the weight or tension of the line even when loaded with heavy ice, and whipped by the wind.

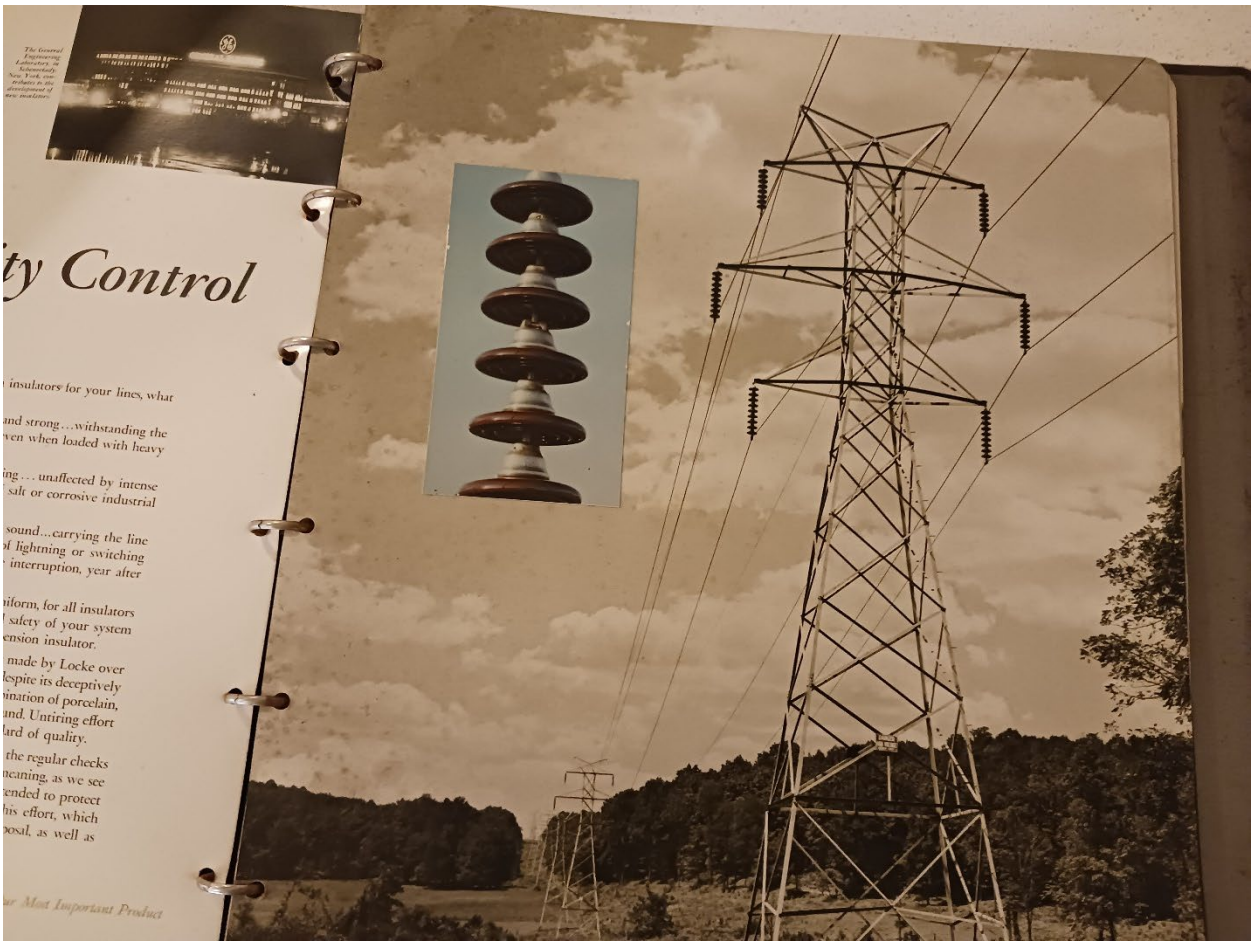
You want them to be unchanging… unaffected by intense heat and cold or by the effect of salt or corrosive industrial contamination.

You want them to be electrically sound… carrying the line voltage and the transient voltage of lightning or switching surges without puncture or service interruption, year after year.

You expect this performance to be uniform, for all insulators on your lines. The dependability and safety of your system rests, in a large measure, on each suspension insulator.

Since the first suspension insulator was made by Locke over 50 years ago, this product has become—despite its deceptively simple design—a highly engineered combination of porcelain, glaze, metal, cement and asphaltic compound. Untiring effort is required to maintain the highest standard of quality.

Quality control, in a limited sense, refers to the regular checks of manufacturing operations. But its real meaning, as we see it, involves every test, check and control intended to protect the ultimate performance of every unit. This effort, which involves the laboratory facilities at our disposal, as well as the factory, is presented in this book.



ty Control

insulators for your lines, what

and strong…withstanding the
ven when loaded with heavy

ing… unaffected by intense
salt or corrosive industrial

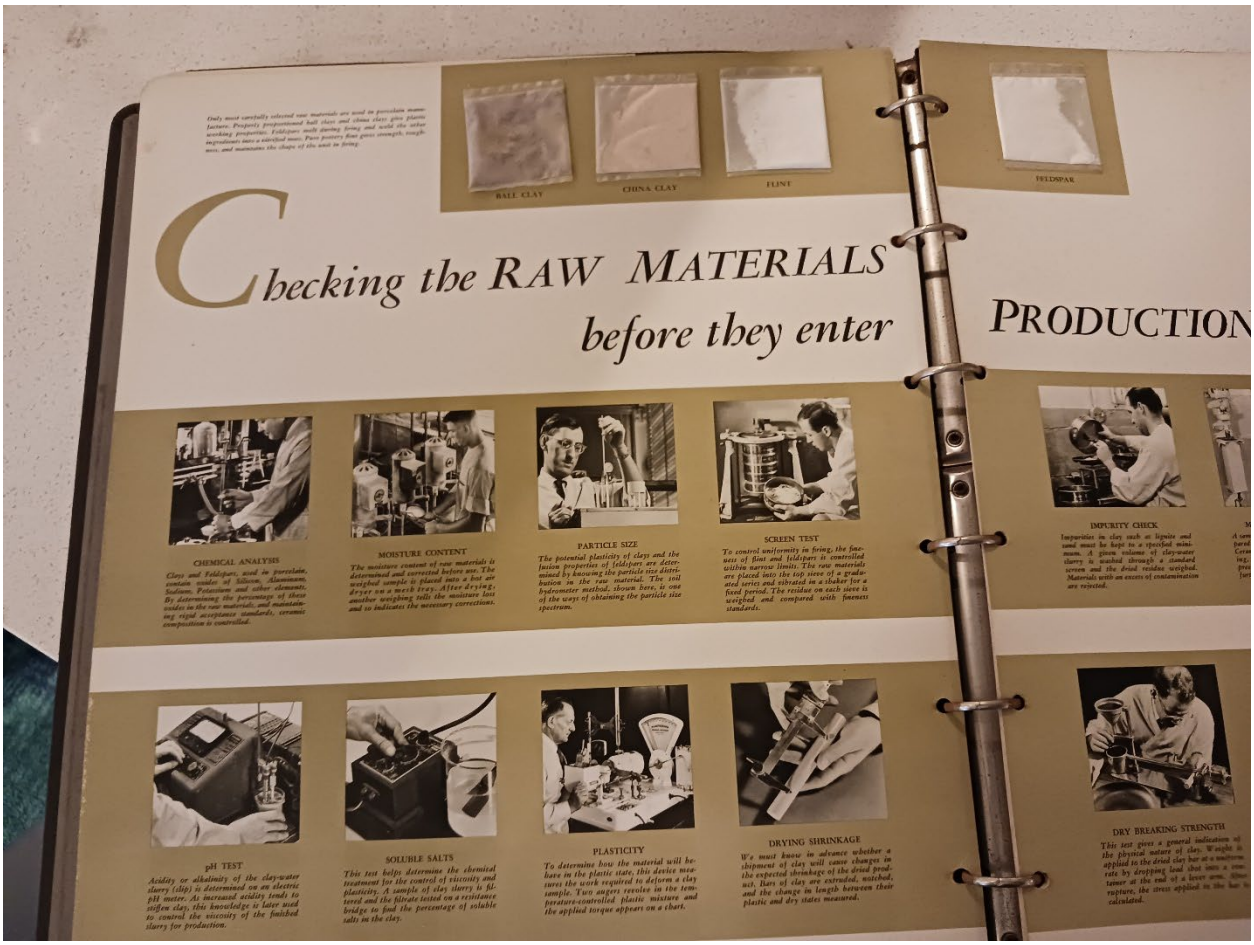
sound…carrying the line
of lightning or switching
interruption, year after

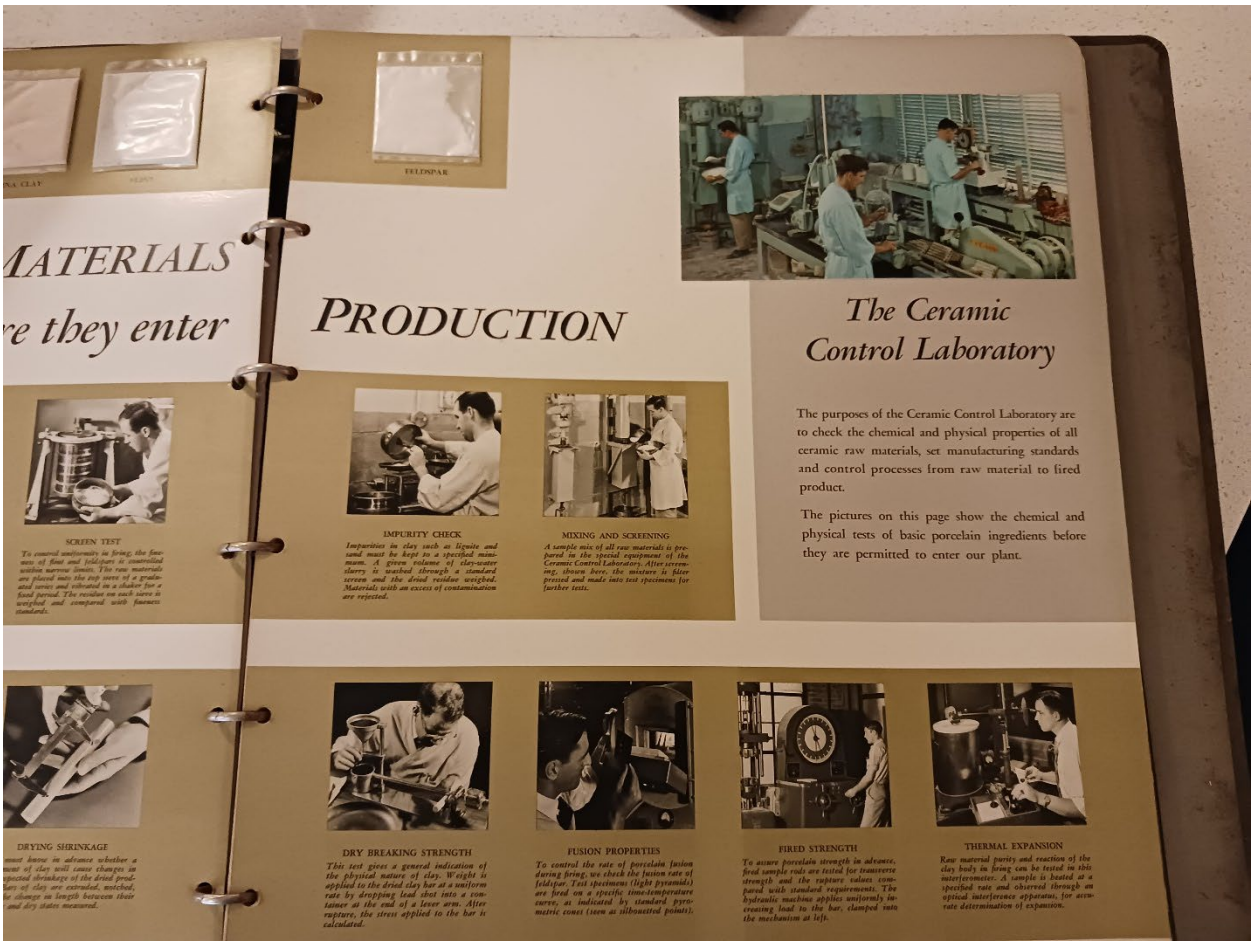
niform, for all insulators
safety of your system
ension insulator.

made by Locke over
despite its deceptively
ination of porcelain,
and. Untiring effort
dard of quality.

the regular checks
eaning, as we see
ended to protect
his effort, which
posal, as well as

ur Most Important Product


Only most carefully selected raw materials are used in porcelain manufacture. Properly proportioned ball clays and china clays give plastic working properties. Feldspars melt during firing and weld the other ingredients into a vitrified mass. Pure pottery flint gives strength, toughness, and maintains the shape of the ware in firing.
BALL CLAY
CHINA CLAY
FLINT
FELDSPAR
Checking the RAW MATERIALS before they enter
PRODUCTION
CHEMICAL ANALYSIS
Clays and Feldspars, used in porcelains, contain oxides of Silicon, Aluminum, Sodium, Potassium and other elements. By determining the percentage of these oxides in the raw materials, and maintaining rigid acceptance standards, ceramic composition is controlled.
MOISTURE CONTENT
The moisture content of raw materials is determined and corrected before use. The weighed sample is placed into a hot air dryer on a mesh tray. After drying, another weighing tells the moisture lost and so indicates the necessary corrections.
PARTICLE SIZE
The potential plasticity of clays and the fusion properties of feldspars are determined by knowing the particle size distribution in the raw material. The test hydrometer method, shown here, is one of the ways of obtaining the particle size spectrum.
SCREEN TEST
To control uniformity in firing, the fineness of flint and feldspars is controlled within narrow limits. The raw materials are placed into the top sieve of a graduated series and vibrated in a shaker for a fixed period. The residue on each sieve is weighed and compared with fineness standards.
IMPURITY CHECK
Impurities in clay such as lignite and sand must be kept to a specified minimum. A given volume of clay-water slurry is washed through a standard screen and the dried residue weighed. Materials with an excess of contamination are rejected.
pH TEST
Acidity or alkalinity of the clay-water slurry (slip) is determined on an electric pH meter. As increased acidity tends to soften clay, this knowledge is later used to control the viscosity of the finished slurry for production.
SOLUBLE SALTS
This test helps determine the chemical treatment for the control of viscosity and plasticity. A sample of clay slurry is filtered and the filtrate tested on a resistance bridge to find the percentage of soluble salts in the clay.
PLASTICITY
To determine how the material will behave in the plastic state, this device measures the work required to deform a clay sample. Two augers revolve in the temperature-controlled plastic mixture and the applied torque appears on a chart.
DRYING SHRINKAGE
We must know in advance whether a shipment of clay will cause changes in the expected shrinkage of the dried product. Bars of clay are extruded, notched, and the change in length between their plastic and dry states measured.
DRY BREAKING STRENGTH
This test gives a general indication of the physical nature of clay. Weight is applied to the dried clay bar at a uniform rate by dropping lead shot into a container at the end of a lever arm. At rupture, the stress applied to the bar is calculated.


FELDSPAR
MATERIALS
re they enter
PRODUCTION
The Ceramic Control Laboratory
The purposes of the Ceramic Control Laboratory are to check the chemical and physical properties of all ceramic raw materials, set manufacturing standards and control processes from raw material to fired product.
The pictures on this page show the chemical and physical tests of basic porcelain ingredients before they are permitted to enter our plant.
SCREEN TEST
To control uniformity in firing, the fineness of flint and feldspars is controlled within narrow limits. The raw materials are placed onto the top sieve of a graduated series and vibrated on a shaker for a fixed period. The residue on each sieve is weighed and compared with fineness standards.
IMPURITY CHECK
Impurities in clay such as lignite and sand must be kept to a specified maximum. A given volume of clay-water slurry is washed through a standard screen and the dried residue weighed. Materials with an excess of contamination are rejected.
MIXING AND SCREENING
A sample mix of all raw materials is prepared in the special equipment of the Ceramic Control Laboratory. After screening, shown here, the mixture is filter pressed and made into test specimens for further tests.
DRYING SHRINKAGE
DRY BREAKING STRENGTH
This test gives a general indication of the physical nature of clay. Weight is applied to the dried clay bar at a uniform rate by dropping lead shot into a container at the end of a lever arm. After rupture, the stress applied to the bar is calculated.
FUSION PROPERTIES
To control the rate of porcelain fusion during firing, we check the fusion rate of feldspar. Test specimens (light pyramids) are fired on a specific time-temperature curve, as indicated by standard pyrometric cones (seen as silhouetted points).
FIRED STRENGTH
To assure porcelain strength in advance, fired sample rods are tested for transverse strength and the rupture values compared with standard requirements. The hydraulic machine applies uniformly increasing load to the bar, clamped into the mechanism at left.
THERMAL EXPANSION
Raw material purity and reaction of the clay body in firing can be tested in this interferometer. A sample is heated at a specified rate and observed through an optical interference apparatus, for accurate determination of expansion.

Production Control in Mixing and Prepa

To achieve porcelain uniformity, we must control a number of inherent variables. Specific gravity, temperature, viscosity, plasticity, particle size, alkalinity or acidity, pressure, time, humidity . . . all of these influence the final product. Extreme control is needed to achieve the uniformity which you have a right to expect in all insulators. Our rigid manufacturing standards are constantly monitored, using recognized control methods.

ELECTRICAL CONTROLS

All raw materials are stored and batched through a preset control panel, assuring uniformity of composition. Automatic shut-off devices prevent errors. The operator has full control of all storing and batching operations from this panel.

AUTOMATIC SCALES

The batch weights of all components are predetermined by a scale setting for every raw material. As the scales print a record of each batch processed, a further check is available over the raw materials entering the mixing machinery.

TEMPERATURE AND SPECIFIC GRAVITY

Each mixing machine has an automatic temperature control device. Also, temperature and specific gravity of each batch of slip (porcelain slurry), shown in beaker, on color picture, is measured before it goes into the production system.

VISCOSITY CHECK

The viscosity of the slip is checked to rigid specifications. This affords control over the flow characteristics and moisture content of the plastic porcelain material to be filtered from this slurry.

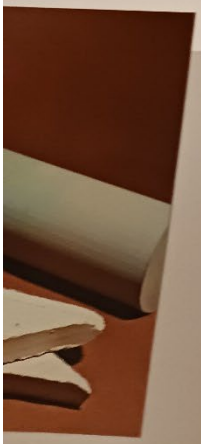
TEST FIRING

Samples of production material undergo laboratory firing tests as a control of composition and to indicate the quality to be expected of the finished porcelain. They are fired in a special test furnace with automatically controlled time-temperature cycle.

Control in

Mixing and Preparation of Porcelain Body

TEMPERATURE AND SPECIFIC GRAVITY

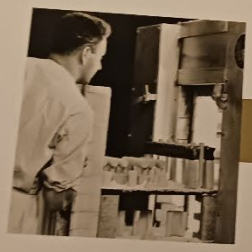


VISCOSITY CHECK

The viscosity of the slip is checked to rigid specifications. This affords control over the flow characteristics and moisture content of the plastic porcelain material to be filtered from this slurry.

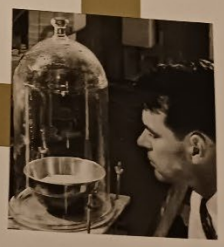
STIFFNESS CHECK

This is a measure of the workability of the extruded plastic mass from which insulators will be formed. At each size and shape of insulator requires clay of different flow properties, this is an important step in process control.



TEST FIRING

Samples of production material undergo laboratory firing tests as a control of composition and to indicate the quality to be expected of the finished porcelain. They are fired in a special test furnace on an automatically controlled time-temperature cycle.



CHECK FOR LAMINATIONS

Slices of extruded plastic material are checked to insure that no air is entrapped which might weaken the structure of the finished porcelain. Here, one of these slices is examined under high vacuum in order to discover any potential weakness.

Progress Is Our Most Important Product

CHECKING

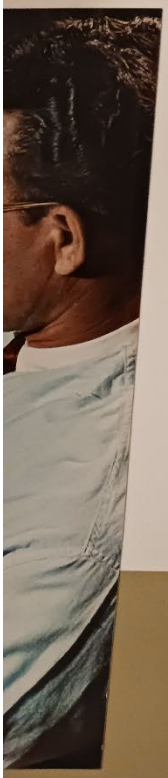
the Form

The final flash
the proper co
ing process—b
tests described
is particularly
the fired stat

HEAD DIM
To insure the accurate fit of
the finished insulator, shell
formed shells and cut in ha
carefully compared with the
recorded.

WALL
Cutting the insulator h
inspector to measure
diameters. By making
ments is equal, eccen
of structural weakness

ECKIN



the Formed Insulator Shell

The final flashover values, dielectric strength, and mechanical strength depend on the proper configuration of the insulator shell. This shape is determined in the forming process—hot pressing with a rotating die. Quality control personnel conduct the tests described below on a routine basis, for positive control of insulator shape. This is particularly important, as the clay will shrink by one eighth between this and the fired state.

HEAD DIMENSION

To insure the accurate fit of the cap and ball bolt to the finished insulator shell, heads are sliced from formed shells and cut in half. The head diameter is carefully compared with the standard dimension and recorded.

HEAD THICKNESS

The resistance to puncture and the strength of the finished insulator depends largely on the proper thickness of the porcelain area which separates the cap from the ball bolt. It is constantly inspected to assure proper dimensions.

WALL THICKNESS

Cutting the insulator head into quarters allows the inspector to measure wall thickness across two diameters. By making sure that each of these measurements is equal, eccentric forming and the possibility of structural weakness are avoided.

UNIFORMITY OF CORRUGATIONS

To maintain full leakage distance and flashover values, the size of corrugations must be rigidly controlled. Shell thickness and corrugation dimensions are checked. This assures proper forming.

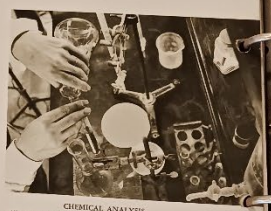
GLAZE & SAND *Control*

Glaze on porcelain produces a glassy
addition, the compression glaze on Loc
and its thickness carefully controlled, t
of the unit. The routine checks, show
tained at the highest level.

The "Sand", a special ceramic mixture,
shells. It offers a firm gripping surface

FIRING AND TESTING OF SAMPLE BATCH

A sample from each batch of production glaze is applied to standard porcelain bars and fired for an appearance check. In addition, they are checked for transverse strength, as shown here.



CHEMICAL ANALYSIS

All glaze materials must undergo a complete chemical analysis, in accordance with set engineering standards. Oxide content, impurities, and amount of soluble and insoluble salts are checked.

ZE & SAND
Control

Is Our Most Important Product

Glaze on porcelain produces a glossy surface, readily cleaned of contamination. In addition, the composition glaze on Locke Rheoglaze® insulators is so compounded and its thickness carefully controlled, that it greatly increases the mechanical strength of the unit. The routine checks shown here, assure that these specifics are maintained at the highest level.

The "Sand", a special ceramic mixture, is applied to heads and pinholes of porcelain shells. It offers a firm gripping surface to the cement by which hardware is applied.

CHEMICAL ANALYSIS

All glaze materials must undergo a complete chemical analysis, in accordance with set engineering standards. Oxide content, impurities, and amount of soluble and insoluble salts are checked.

FIRING AND TESTING OF SAMPLE BATCH

A sample from each batch of production glaze is applied to standard porcelain bars and fired in an experimental kiln. After firing, they are checked for maximum strength, as shown here.

AUTOMATIC GLAZING AND SANDING MACHINE

As the spinning insulator shells are glazed, a uniform coating results through the control of working head and pressure. Further application is sealed by fusion of glaze electrons, specific gravity and consistency of ceramic suspension.

GLAZE THICKNESS CHECK

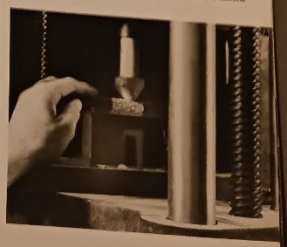
The effectiveness of automatic glaze application to the insulator shell is further checked by the measurement of the applied glaze thickness. Consistency of glaze is essential to the strength characteristics of Locke Rheoglaze insulators.

SAND PARTICLE SIZE DETERMINATION

The mixing and drying of insulator "sand" is rigidly controlled to insure maximum shear strength of sanded surfaces. As this strength also depends on uniform sand particle size, pulverizing and screening operations are monitored by the laboratory.

CHECK OF SAND STRENGTH

The thermal characteristics of glaze, sand and porcelain body must be fully compatible for maximum adhesion to each other. To insure this, test bars of porcelain are glazed and sanded, for a laboratory strength check under transverse loading.



*Registered Trademark, General Electric Company

HUMIDITY CONTROL
Conditions within the tunnel driers are maintained by instruments which constantly record temperature and humidity.
TIME CYCLE CONTROL
This device controls the drier cycle. After each carload of insulator shells is placed into the drier, the hydraulic mechanism, here being started, pushes the car forward at a predetermined rate.
MOISTURE CHECK
After the insulators are removed from the drier, checks are made of residual moisture content. This control is necessary as a part of conditioning for glaze application. The rapid forced air drier shown is used as a fast means of determining moisture content.
Drying and
Firing Co
Prior to glazing, the insulator shells pass throu
midity controlled driers. Gradually decreas
midity gives a proper rate of drying, elim
stresses or weaknesses produced by an excess
ing rate. After the moisture-conditioned i
have been glazed, the dry insulator shells e
tronically controlled gas fired tunnel kil
complete vitrification is achieved.
CONSTANT SPEED DRIVE
Hydraulic pusher mechanisms are used to propel
ware cars through the entire length of the tunnel kil
according to a technically determined firing cycle.
resulting uniform application of heat is mandatory
the production of high quality porcelain.

Firing Controls

Prior to glazing, the insulator shells pass through humidity controlled driers. Gradually decreasing humidity gives a proper rate of drying, eliminating stresses or weaknesses produced by an excessive drying rate. After the moisture-conditioned insulators have been glazed, the dry insulator shells enter electronically controlled gas fired tunnel kilns. Here, complete vitrification is achieved.

CONSTANT SPEED DRIVE

Hydraulic pusher mechanisms are used to propel loaded ware cars through the entire length of the tunnel kiln, according to a technically determined firing cycle. The resulting uniform application of heat is mandatory for the production of high quality porcelain.

AUTOMATIC DRAFT CONTROL

Pressure indicators and automatic controllers are used to maintain constant draft within the kilns. This means a uniform rate of pre-heating by compensating for outside barometric and wind conditions.

AUTOMATIC TEMPERATURE CONTROLS

Kiln temperatures are held within extremely narrow limits by electronic control instruments which also keep constant records for in fuel ratios are automatically maintained to produce proper combustion conditions and kiln atmosphere. Pre-heat and cooling temperatures are recorded hourly by control personnel.

TESTS
of Fired Insulator Shells

DYE PENETRATION TEST

All suspension insulators are fired to be 100% vitreous. Sections from fired ware are immersed for six hours in a dye solution under an applied pressure of 10,000 lbs. per square inch. Thorough vitrification is shown by lack of dye penetration.

FIRED DENSITY TEST

Samples of fired ware are laboratory tested to determine their density. As the specific gravity of properly vitrified porcelain falls within a very narrow range, it is possible through this test to detect very small deviations from satisfactory composition.

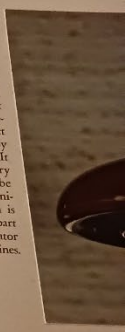
GLAZE THICKNESS CHECK

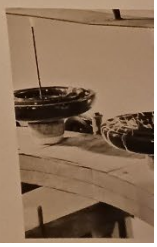
The measuring microscope is used to check insulator glaze thickness. Here, a suspension insulator shell, from which a slice has been cut, is checked for thickness of the microscopic layer of glaze bonded to its surface.

MICROSCOPIC EXAMINATION

Sections of insulators are ground to extreme thinness and examined under polarized light with a petrographic microscope. This reveals the crystalline nature and state of maturity of the fired porcelain.

The porcelain is now completed. Its smooth, solid appearance does not reveal the many specifications it must meet. It is homogeneous, non-porous, of correct dimensions and covered by glaze of precise thickness. It must possess a satisfactory micro-structure, and be electrically and mechanically sound. Only then is it allowed to become a part of a suspension insulator for your transmission lines.





...sulator Shells

FIRED DENSITY TEST

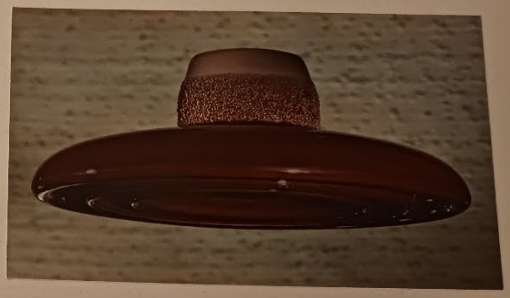
Samples of fired ware are laboratory tested to determine their density. As the specific gravity of properly vitrified porcelain falls within a very narrow range, it is possible through this test to detect very small deviations from satisfactory composition.

MICROSCOPIC EXAMINATION

Sections of insulators are ground to extreme thinness and examined under polarized light with a petrographic microscope. This reveals the crystalline nature and state of maturity of the fired porcelain.

Photomicrograph, 500 times enlarged under polarized light, shows degree of vitrification of fired porcelain. Note quartz crystals (Q) and Mullite (M), a crystal formation of aluminum silicates.

The porcelain is now completed. Its smooth, solid appearance does not reveal the many specifications it must meet. It is homogeneous, non-porous, of correct dimensions and covered by glaze of precise thickness. It must possess a satisfactory micro-structure, and be electrically and mechanically sound. Only then is it allowed to become a part of a suspension insulator for your transmission lines.



HIGH FREQUENCY TEST

This is the first electrical examination of porcelain shells. Moving on a grounded conveyor, they must withstand a flashover test at about 200 kilocycles per second for 3 to 5 seconds without puncture.

Progress Is Our Most Important Product

15

TESTING *Caps and Ball Bolts*

VISUAL INSPECTION

LIP DIAMETER GAUGE

PROFILE HEIGHT GAUGE

Based on rigid sampling techniques, fifteen tests and checks are made on hardware components of suspension insulators, before and after galvanizing.

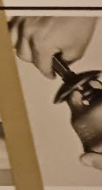
These tests demonstrate our determination to accept only hardware which meets our critical standards of quality and workmanship. This assures you of the service durability so vital in insulator hardware.

Progress Is Our Most Important Product

BALL BOLT GAUGE

HARDNESS TEST

BALL SOCKET GAUGE



UNDER

PULL TEST OF CAP

Simulating service conditions, caps are pulled to the rated strength and examined for incipient cracks or discontinuities. Any fault causes rejection of the lot.

Caps and Ball Bolts

PROFILE HEIGHT GAUGE

By the use of this gage, the depth of insulator cups is controlled. Through form adherence to specification, the proper fit of the cap over the insulator head is predetermined and correct insulator connecting length maintained.

Based on rigid sampling techniques, fifteen tests and checks are made on hardware components of suspension insulators, before and after galvanizing.

These tests demonstrate our determination to accept only hardware which meets our critical standards of quality and workmanship. This assures you of the service durability so vital in insulator hardware.

Progress Is Our Most Important Product

BALL BOLT GAUGE

This precision gauge reveals the dimensional fidelity of ball bolts. It assures proper seating and load distribution in service. Sufficient shank diameter is essential in avoiding fatigue failures of insulator strings.

HARDNESS TEST

Hardware must not only be strong but also ductile to avoid rupture in service. One measure of this pliability is made with the hardness tester, also used on cotter keys.

PULL TEST OF BALL BOLT

Alter bolt holes are tested to destruction, fractures are examined and bolt elongation determined. This indicates the balance between tensile strength and ductility which aids in long insulator service life.

PREECE TEST OF BALL BOLT

Random samples are repeatedly submerged in a copper sulphate solution for a specified period of time and washed clean. Six or more cycles without permanent copper deposition indicate acceptable galvanizing thickness.

BALL SOCKET GAUGE

The ball socket gauge controls socket entrance dimensions. This helps avoid the possibility of accidental disengagement of insulators and assures interchangeability with units of other manufacture.

UMBRELLA GAUGE

Proper seating of ball bolts in the precisely designed socket contours of the cap can be assumed only if the cap passes the standard umbrella gauge.

COTTER KEYHOLE GAUGE

This gauge confirms that the cotter key will lock permanently and cannot slip out of the cap due to improper keyhole dimensions.

CHECK AFTER GALVANIZING

Each cap is inspected after galvanizing for continuity of coating on all surfaces. Caps with any sharp projecting surfaces are rejected, to avoid the possibility of corona in service.

PULL TEST OF CAP

Simulating service conditions, caps are pulled to the rated strength and examined for incipient cracks or distortions. Any fault causes rejection of the lot.

PREECE TEST OF CAP

In many applications, an insulator's ability to resist corrosion is a primary consideration. This depends largely on the quality of galvanizing which is measured by this method described above.

ASPHALT COATING CONTROL

To distribute the load evenly and prevent chemical action between cap and cement, an asphalt compound must be applied with uniform thickness. This is done by controlling viscosity and spray direction for even application to all inside surfaces of the cap.

PULL TEST OF COTTER KEYS

A dynamometer checks the form of cotter keys and their resistance to deformation as they are pulled through a gauge. This guarantees that insulators will not separate accidentally.

Assembly Controls

Long, uninterrupted service of your transmission lines and avoidance of excessive system maintenance may, in a large measure, be contributed to assembly techniques which assure the uniform high mechanical strength of suspension insulators. Recognizing our responsibilities, we have not only developed the best available assembly techniques, but are always striving to improve them further. The most vital controls at this stage are those over the proportioning, mixing, setting and curing of the Portland cement which bonds porcelain and hardware components into a rugged unit.

CEMENT SETTING TIME CHECK

CEMENT VISCOSITY

The viscosity of the cement paste is ... viscosimeter. This is an additional ... mixing process, further assuring the ... setting.

Progress Is Our Most Important Product

y Controls

on lines and avoidance of excessive
contributed to assembly techniques
strength of suspension insulators.
only developed the best available
improve them further. The most
roportioning, mixing, setting and
porcelain and hardware compo-

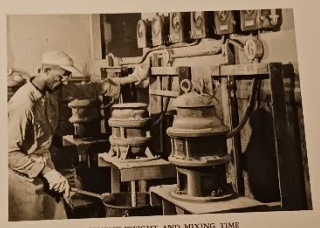
Progress Is Our Most Important Product

CEMENT SETTING TIME CHECK

In this standard test, a needle of specific diameter is dropped through a cement sample to determine the time required for initial and final set. From this, the safe working time for cement is derived.

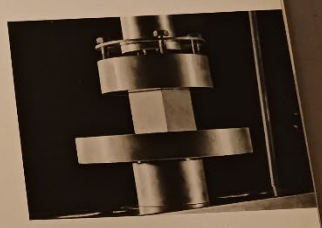
CEMENT EXPANSION TEST

In an autoclave, cement bars are subjected to superheated steam at high pressure. The condition and dimensions of the cement after testing give clues to its soundness and behavior over years of service.



CEMENT WEIGHT AND MIXING TIME

The proper cement to water ratio for optimum strength depends on exacting control of material weight and proportion. Electric timing of mixers assures proper mixing of water and cement.



CEMENT COMPRESSION TEST

As cement cubes are crushed in a laboratory test device, the strength to be expected in actual use is indicated in advance.

CEMENT VISCOSITY CHECK

The viscosity of the cement paste is checked by a drop gauge viscosimeter. This is an additional control over the weighing and mixing process, further assuring the best possible timing of cement setting.

CURING CONTROLS

Assembled insulators go through a continuous curing cycle under automatically controlled humidity and temperature conditions. This provides an ideal climate for cement set, thorough hydration and quick development of full strength.

Final Production Line TESTS

Control procedures and tests—checks of raw materials, of forming, drying, glazing, firing, hardware and assembly—all of these bear witness to unexcelled quality control at Locke—your guarantee of uniform and dependable performance.

PULL TEST

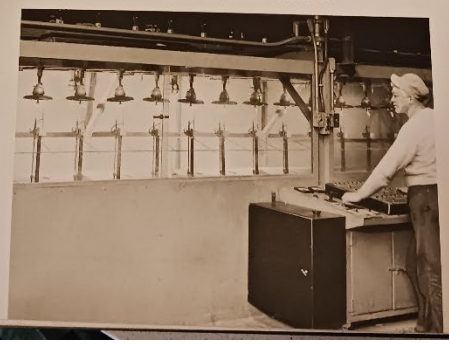
After the cement is thoroughly cured, suspension insulators are tested to their maximum recommended working load, exceeding standard test requirements. This precedes the final electrical test.

VISUAL INSPECTION

The last production check of each insulator is made by this inspector—in effect, your man on our payroll—who makes doubly sure that only insulators of select quality are packed and shipped to you.

FLASHOVER TEST

To test its fitness for service—even under conditions of excessive electrical stress—each insulator must travel along this conveyor and undergo a continuous 60-cycle flashover test for at least three minutes.



Final Production Line TESTS

PULL TEST

After the cement is thoroughly cured, suspension insulators are tested to their maximum recommended working load, exceeding standard test requirements. This precedes the final electrical test.

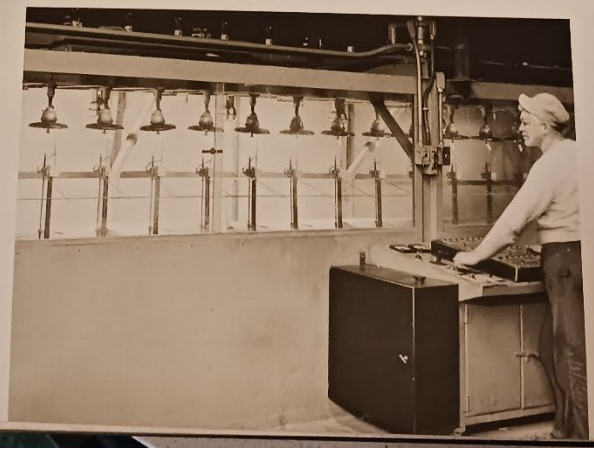
Control procedures and tests—checks of raw materials, of forming, drying, glazing, firing, hardware and assembly—all of these bear witness to unexcelled quality control at Locke—your guarantee of uniform and dependable performance.

VISUAL INSPECTION

The last production check of each insulator is made by this inspector—in effect, your man on our payroll—who makes doubly sure that only insulators of select quality are packed and shipped to you.

FLASHOVER TEST

To test its fitness for service—even under conditions of excessive electrical stress—each insulator must travel along this conveyor and undergo a continuous 60-cycle flashover test for at least three minutes.



Production Line

TESTS

rocedures and tests—checks of
ials, of forming, drying, glazing,
ware and assembly—all of these
s to unexcelled quality control
our guarantee of uniform and
performance.

FLASHOVER TEST

test its fitness for service—even under conditions of
ssive electrical stress—each insulator must travel
g this conveyor and undergo a continuous 60-cycle
over test for at least three minutes.

Production Line

rocedures and tests—checks of
ials, of forming, drying, glazing,
ware and assembly—all of these
s to unexcelled quality control
our guarantee of uniform and
performance.

FLASHOVER TEST

test its fitness for service—even under conditions of sive electrical stress—each insulator must travel e this conveyor and undergo a continuous 60-cycle over test for at least three minutes.

TESTS

High Voltage Laboratory Control

Each day, a quantity of samples of production insulators, selected at random, goes to the high voltage laboratory for a series of control tests. These standard tests enable our engineers to keep continuous control charts of mechanical and electrical strength and assure our customers of full dependability in insulator service.

MECHANICAL AND ELECTRICAL TEST

Here, insulators (such as the one at the lower right, above) suffer a destructive pull test under electrical load. Nature of failure, ultimate values and other pertinent data serve as basis for analysis and provide a continuous performance record.

IMPACT TEST

The impact test subjects samples to hammer blows of increasing severity. The results prove the capability of production insulators to withstand mechanical shocks during installation and service.

PUNCTURE TEST

High and unvarying dielectric strength is essential in suspension insulators. To conduct this test, it is necessary to prevent external flashover. Immersed in insulating oil, the unit is subjected to increasing voltage until puncture occurs.

Progress Is Our Most Important Product

and Special Tests

IMPULSE FLASHOVER

This discharge, flashing across the insulators at about 600,000 Volts, measures the string's resistance to natural lightning. This standard test is used in establishing the characteristics of new insulators, so important to the designer of transmission lines.

LOW FRIQUENCY FLASHOVER

The 60-cycle dry flashover of this insulator string is about 400,000 Volts. From such tests, we can evaluate the ability of an insulator design to withstand voltage surges in service. To estimate characteristics in rain and [illegible] tests are conducted under a controlled water spray.

High Voltage Laboratory Control

Each day, a quantity of samples of production insulators, selected at random, goes to the high voltage laboratory for a series of control tests. These standard tests enable our engineers to keep continuous control charts of mechanical and electrical strength and assure our customers of full dependability in insulator service.

MECHANICAL AND ELECTRICAL TEST

Here, insulators (such as the one at the lower right, above) suffer a destructive pull test under electrical load. Nature of failure, ultimate values and other pertinent data serve as basis for analysis and provide a continuous performance record.

IMPACT TEST

The impact test subjects samples to hammer blows of increasing severity. The results prove the capability of production insulators to withstand mechanical shocks during installation and service.

PUNCTURE TEST

High and unvarying dielectric strength is essential in suspension insulators. To conduct this test, it is necessary to prevent external flashover. Immersed in insulating oil, the unit is subjected to increasing voltage until puncture occurs.

Progress Is Our Most Important Product

and Special Tests

IMPULSE FLASHOVER

This discharge, flashing across the insulators at about 600,000 Volts, measures the string's resistance to natural lightning. This standard test is used in establishing the characteristics of new insulators, so important to the designer of transmission lines.

LOW FREQUENCY FLASHOVER

The 60-cycle dry flashover of this insulator string about 400,000 Volts. From such tests, we can es ability of an insulator design to withstand voltages in service. To estimate characteristics in rain and tests are conducted under a controlled water spr

...atory Control

...a quantity of samples of production insu-
...ted at random, goes to the high voltage
...for a series of control tests. These standard
...our engineers to keep continuous con-
...of mechanical and electrical strength and
...ustomers of full dependability in insu-

IMPACT TEST
...to hammer blows of increasing severity. The
...production insulators to withstand mechanical

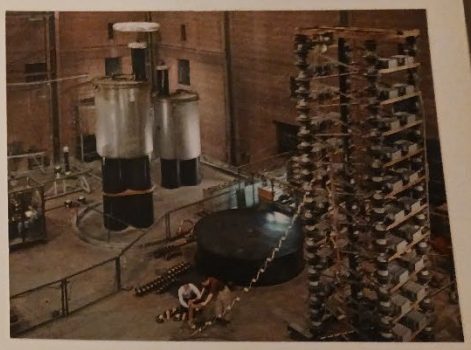
...pension insulators. To
...Immersed in insulat-
...ture occurs.

...Is Our Most Important Product

...and Special Tests

IMPULSE FLASHOVER

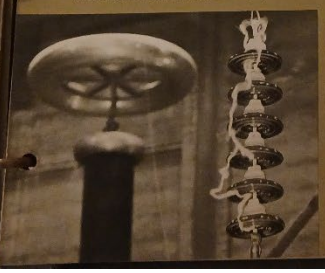
This discharge, flashing across the insulators at about 600,000 Volts, measures the string's resistance to natural lightning. This standard test is used in establishing the characteristics of new insulators, so important to the designers of transmission lines.



This high voltage laboratory is equipped with modern facilities for the evaluation of electrical and mechanical characteristics of today's insulators and of tomorrow's designs. The impulse generator at the right has a capacity of 3 million volts, and can produce extremely steep wave fronts. Low frequency test potentials up to 1 million volts, as required for flashover, puncture and radio noise tests, are delivered by the transformers seen in the left background. In addition, the laboratory is staffed and equipped to handle the great variety of tests and investigations required by development, engineering and manufacturing activities. These facilities, as those for research and design, are our means for the solution of your high voltage insulation problems.

LOW FREQUENCY FLASHOVER

The 60-cycle dry flashover of this insulator string requires about 400,000 Volts. From such tests, we can evaluate the ability of an insulator design to withstand voltages to be met in service. To estimate characteristics in rain and fog, similar tests are conducted under a controlled water spray.

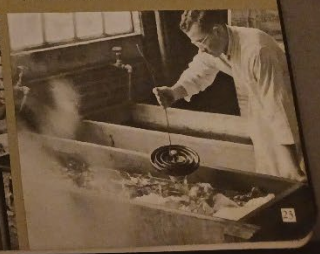


TIME LOAD FRAME

An accelerated life test gives a high measure of the performance to be realized in service. The insulators are loaded in excess of normal service ten for periods ranging up to many years. Low frequency flashover tests check the continued electrical integrity of each unit.

THERMAL SHOCK TEST

Alternate submersion of insulators in freezing and boiling water goes far beyond normal service conditions under which units are suddenly heated or cooled. Absence of cracks or electrical failure after ten of these severe thermal shock cycles indicates highest porcelain quality.



...atory Control

...a quantity of samples of production insu-
...ected at random, goes to the high voltage
...lor a series of control tests. These standard
... our engineers to keep continuous con-
...f mechanical and electrical strength and
...ustomers of full dependability in insu-

IMPACT TEST

...es to hammer blows of increasing severity. The ... production insulators to withstand mechanical ...rvice.

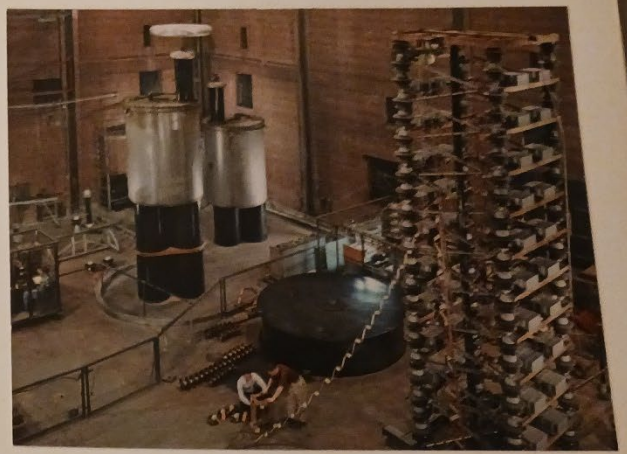
...pension insulators. To
... Immersed in insulat-
...ture occurs.

...Is Our Most Important Product

...and Special Tests

IMPULSE FLASHOVER

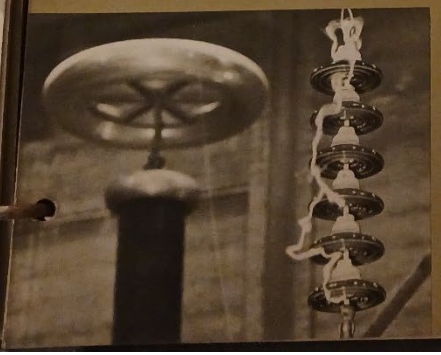
This discharge, flashing across the insulators at about 600,000 Volts, measures the string's resistance to natural lightning. This standard test is used in establishing the characteristics of new insulators, so important to the designer of transmission lines.



This high voltage laboratory is equipped with modern facilities for the evaluation of electrical and mechanical characteristics of today's insulators and of tomorrow's designs. The impulse generator at the right has a capacity of 3 million volts, and can produce extremely steep wave fronts. Low frequency test potentials up to 1 million volts, as required for flashover, puncture and radio noise tests, are delivered by the transformers seen in the left background. In addition, the laboratory is staffed and equipped to handle the great variety of tests and investigations required by development, engineering and manufacturing activities. These facilities, as those for research and design, are our means for the solution of your high voltage insulation problems.

LOW FREQUENCY FLASHOVER

The 60-cycle dry flashover of this insulator string requires about 400,000 Volts. From such tests, we can evaluate the ability of an insulator design to withstand voltages to be met in service. To estimate characteristics in rain and fog, similar tests are conducted under a controlled water spray.

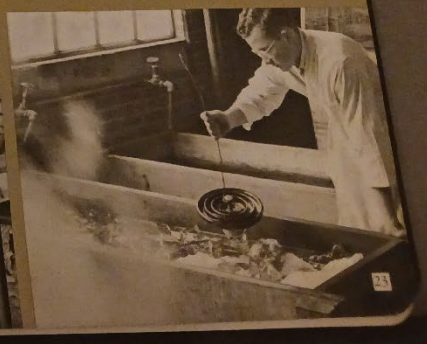


TIME LOAD FRAME

An accelerated life test gives a high measure of the performance to be realized in service. The insulators are loaded in excess of normal service use for periods ranging up to many years. Low frequency flashover tests check the continued electrical integrity of each unit.

THERMAL SHOCK TEST

Alternate submersion of insulators in freezing and boiling water goes far beyond normal service conditions under which units are suddenly heated or cooled. Absence of cracks or electrical failure after ten of these severe thermal shock cycles indicates highest porcelain quality.



77

Separate Control and Test Procedures assure you of uniformly superior Locke Microglaze Suspension Insulators.....

an example
trouble-fre
whether yo
paratus In
ware or o
our reaso

77

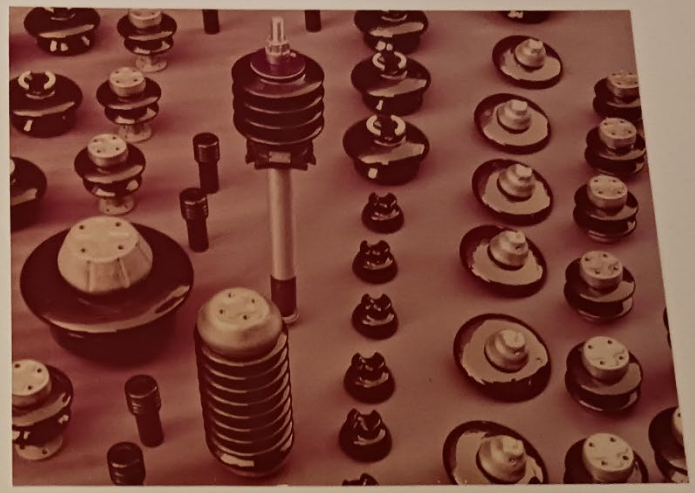
Separate Control and Test Procedures assure you of uniformly superior Locke Microglaze Suspension Insulators.....

an example
trouble-fre
whether yo
paratus In
ware or o
our reaso

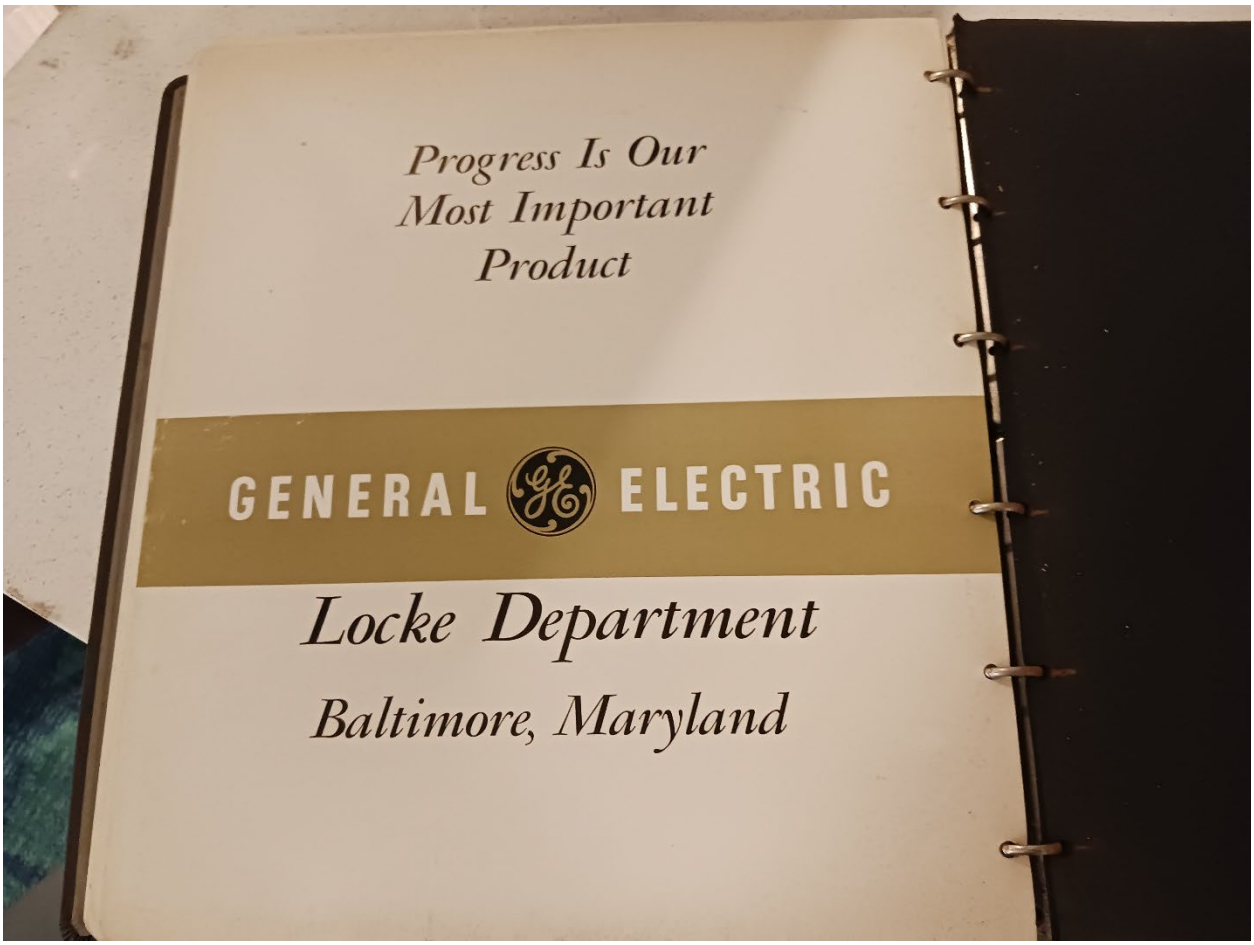
e Control
t Procedures
ou of
ly superior
Microglaze
n Insulators. . . . . .

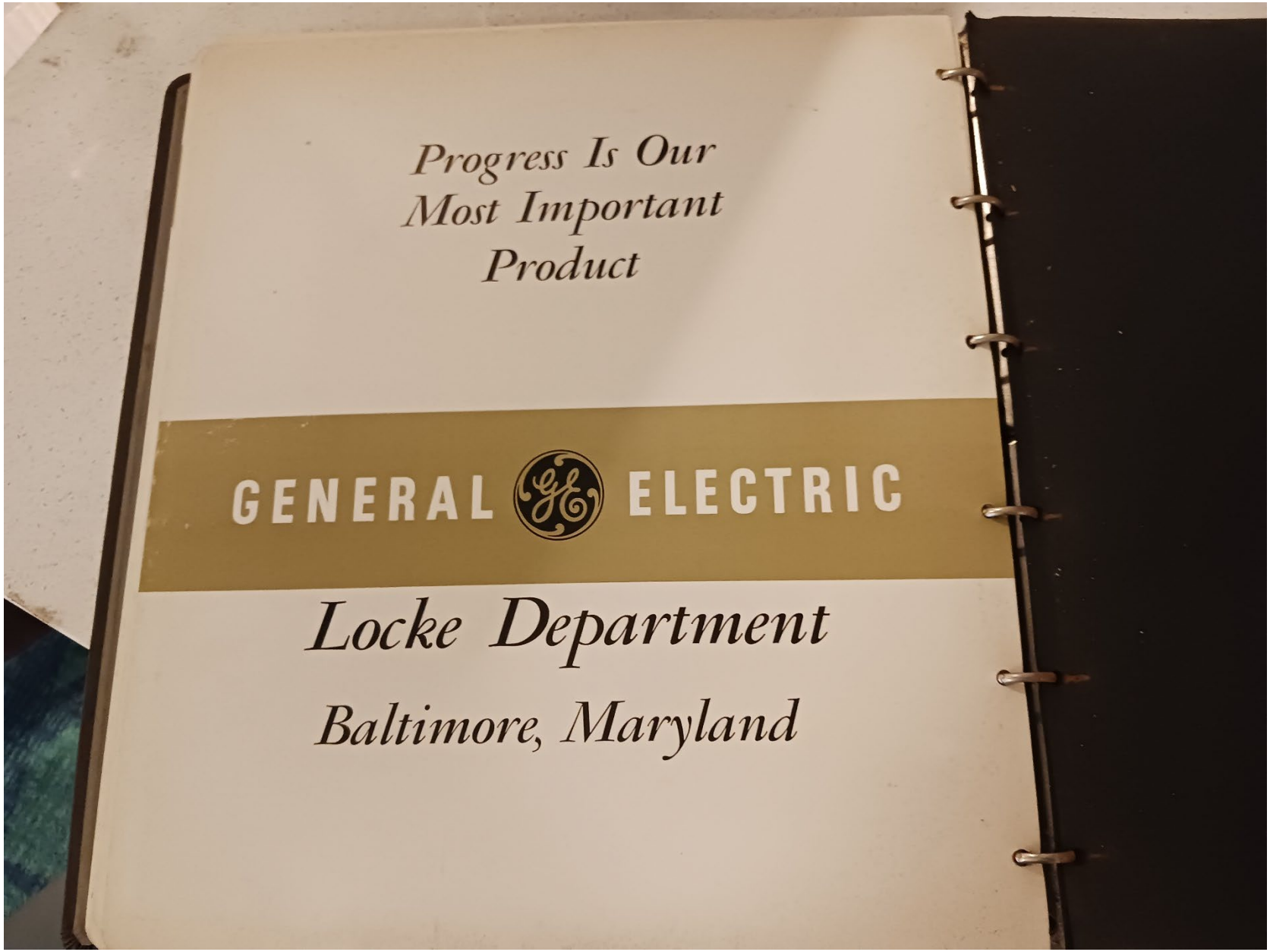
an example of the extreme care taken to assure trouble-free insulator service on your system, whether you buy Suspension, Pin Type or Apparatus Insulators, Bushings, Insulator Hardware or other Insulator Products. It is one of our reasons for saying...

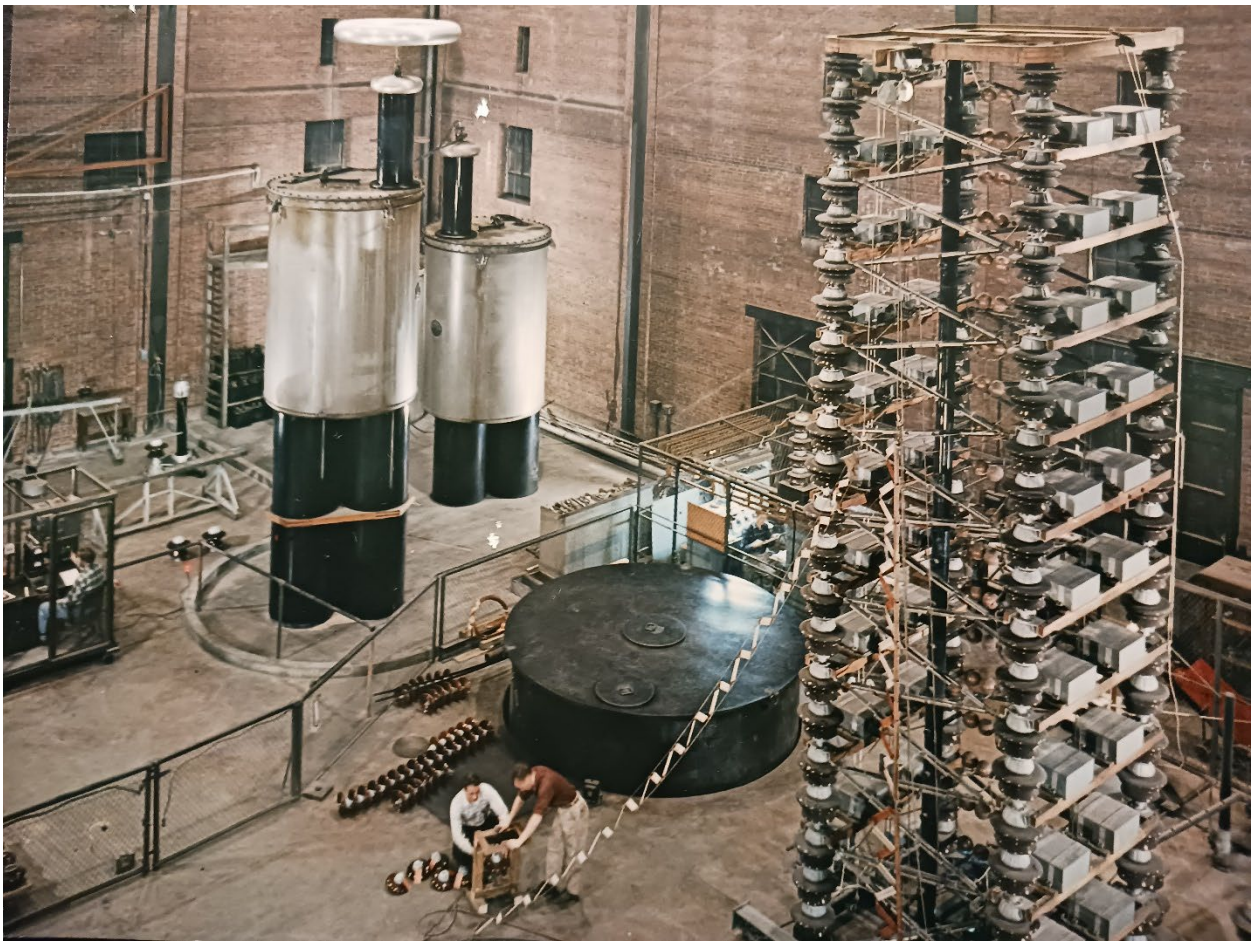
te Control
t Procedures
ou of
ly superior
icroglaze
n Insulators. . . . . .

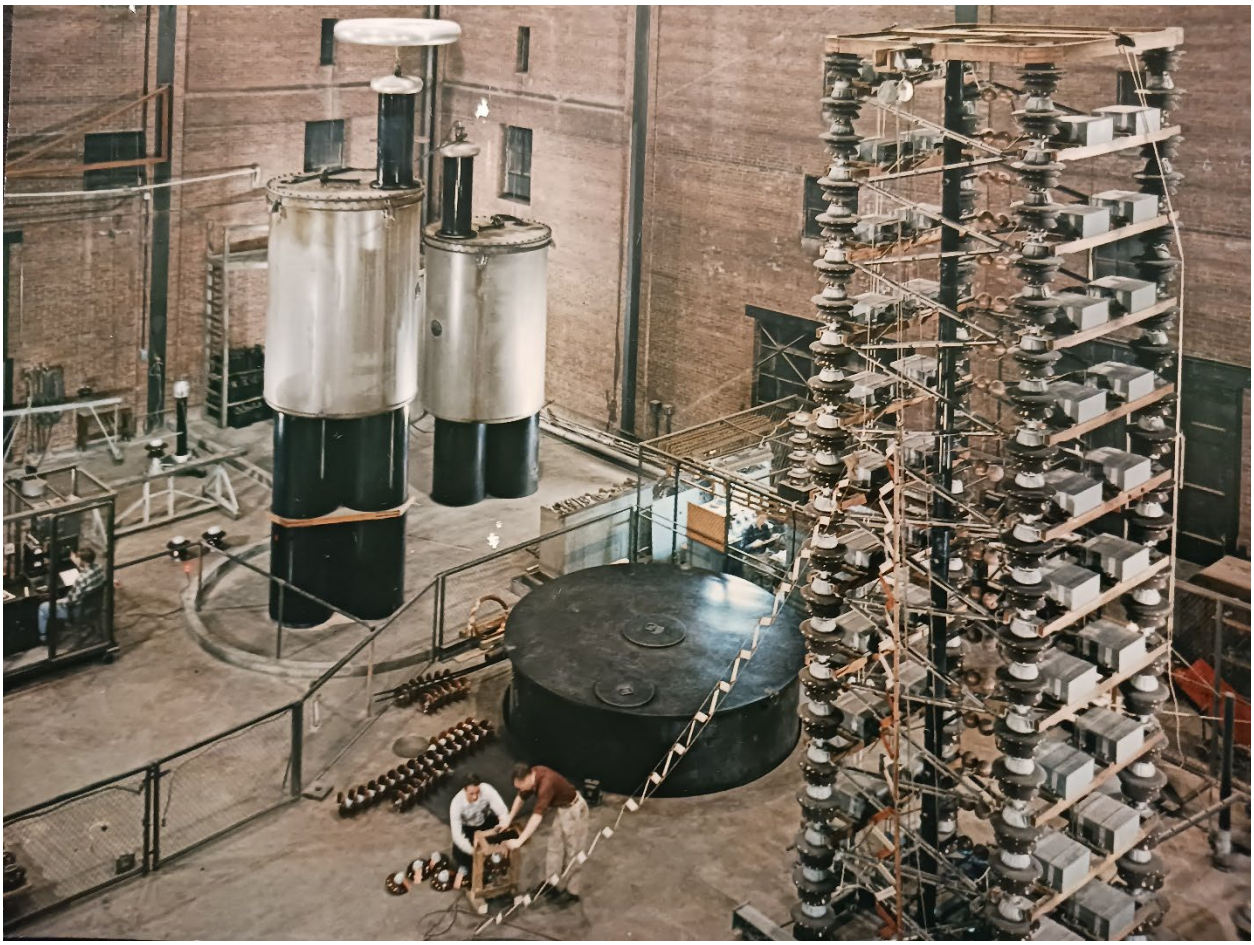


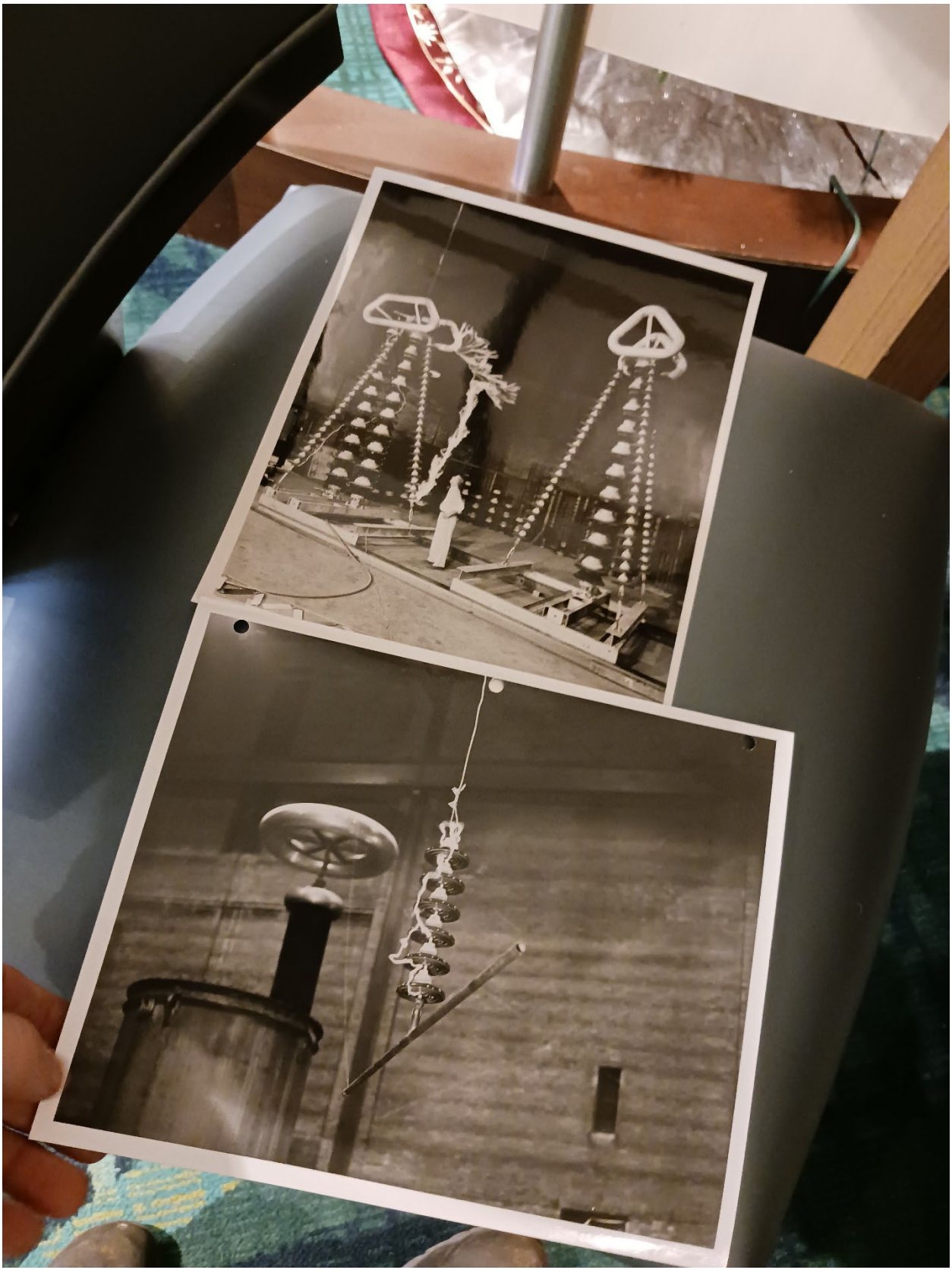
an example of the extreme care taken to assure trouble-free insulator service on your system, whether you buy Suspension, Pin Type or Apparatus Insulators, Bushings, Insulator Hardware or other Insulator Products. It is one of our reasons for saying...

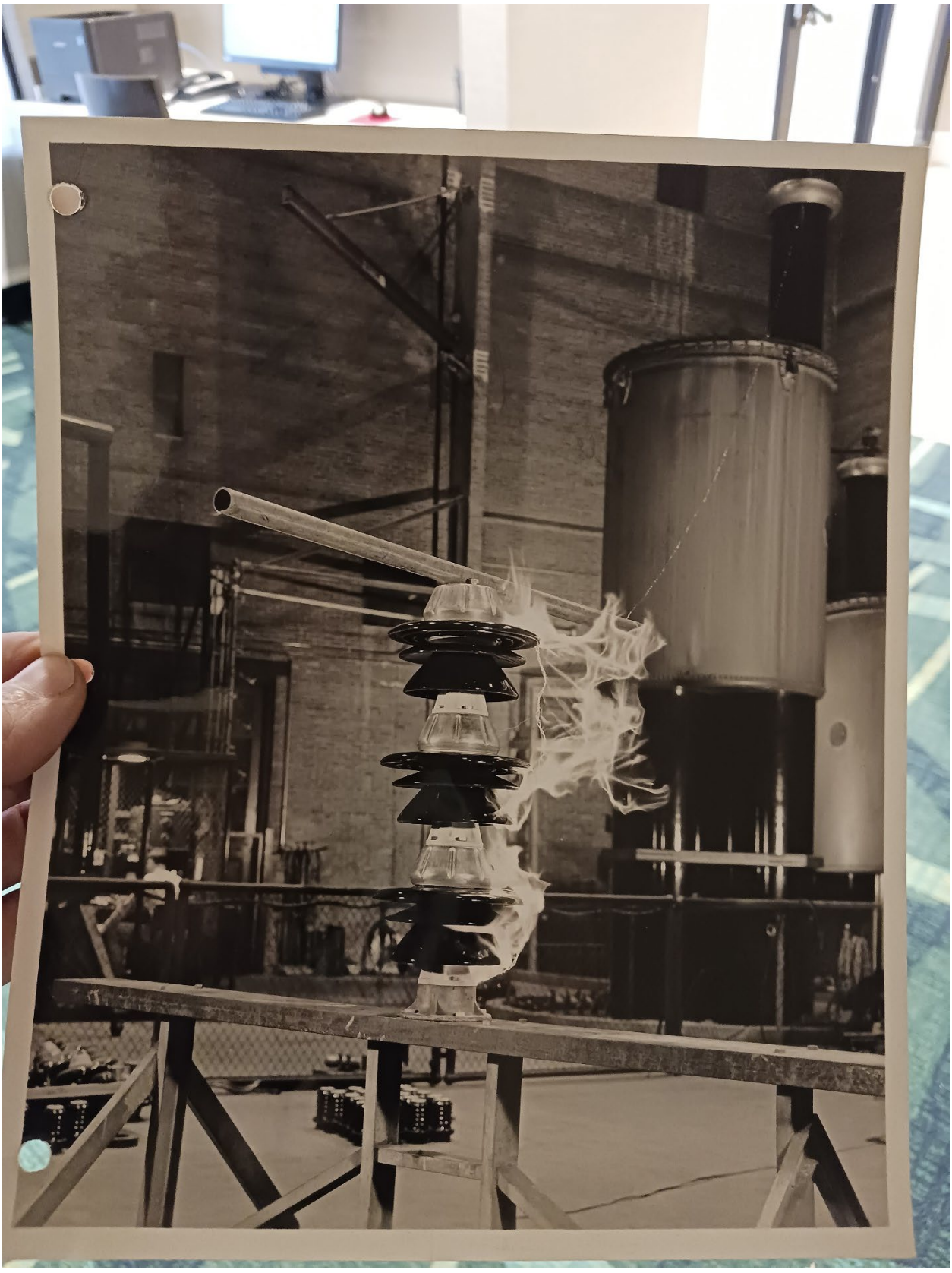

Progress Is Our
Most Important
Product
GENERAL ELECTRIC
Locke Department
Baltimore, Maryland

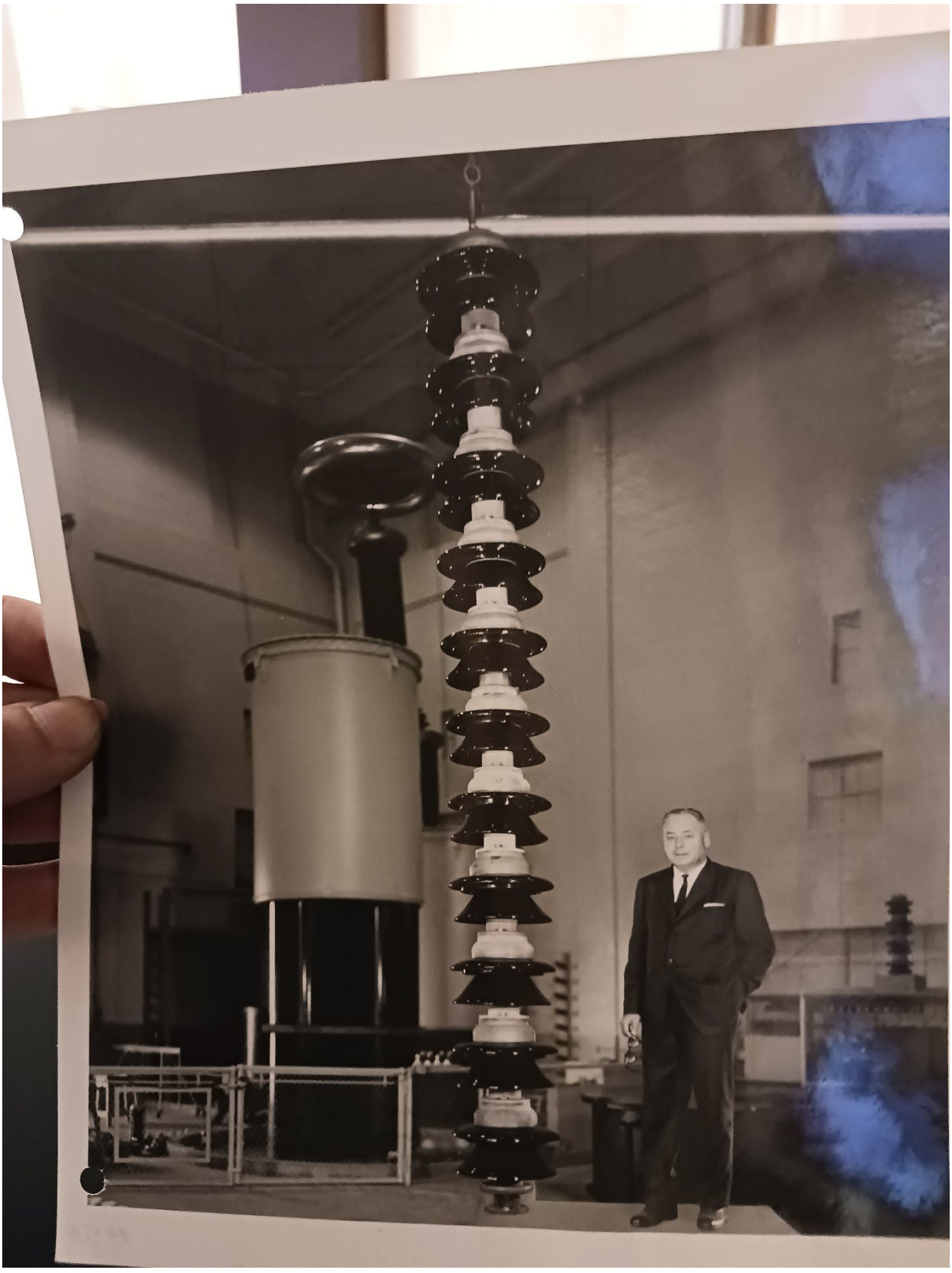

Progress Is Our
Most Important
Product
GENERAL ELECTRIC
Locke Department
Baltimore, Maryland

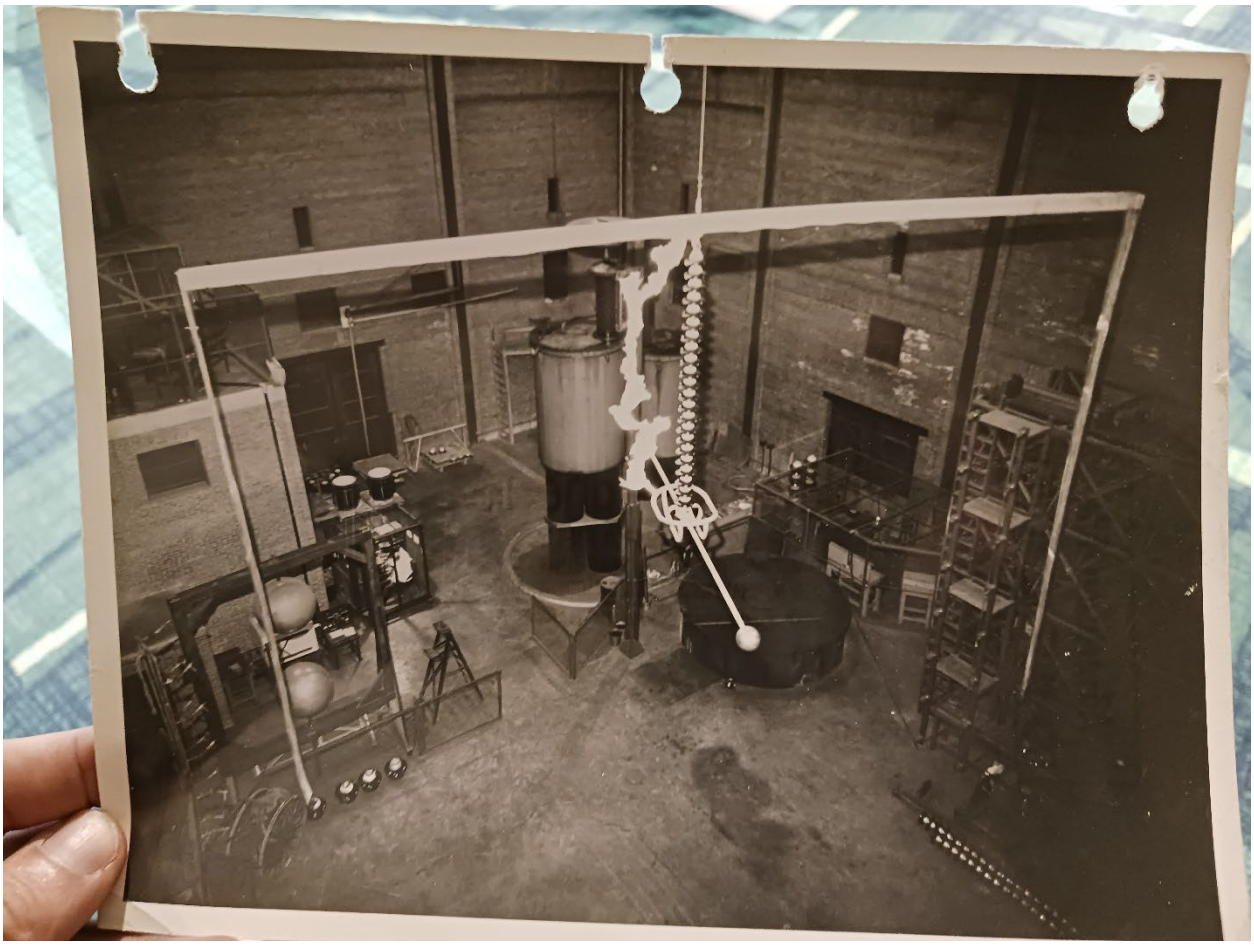




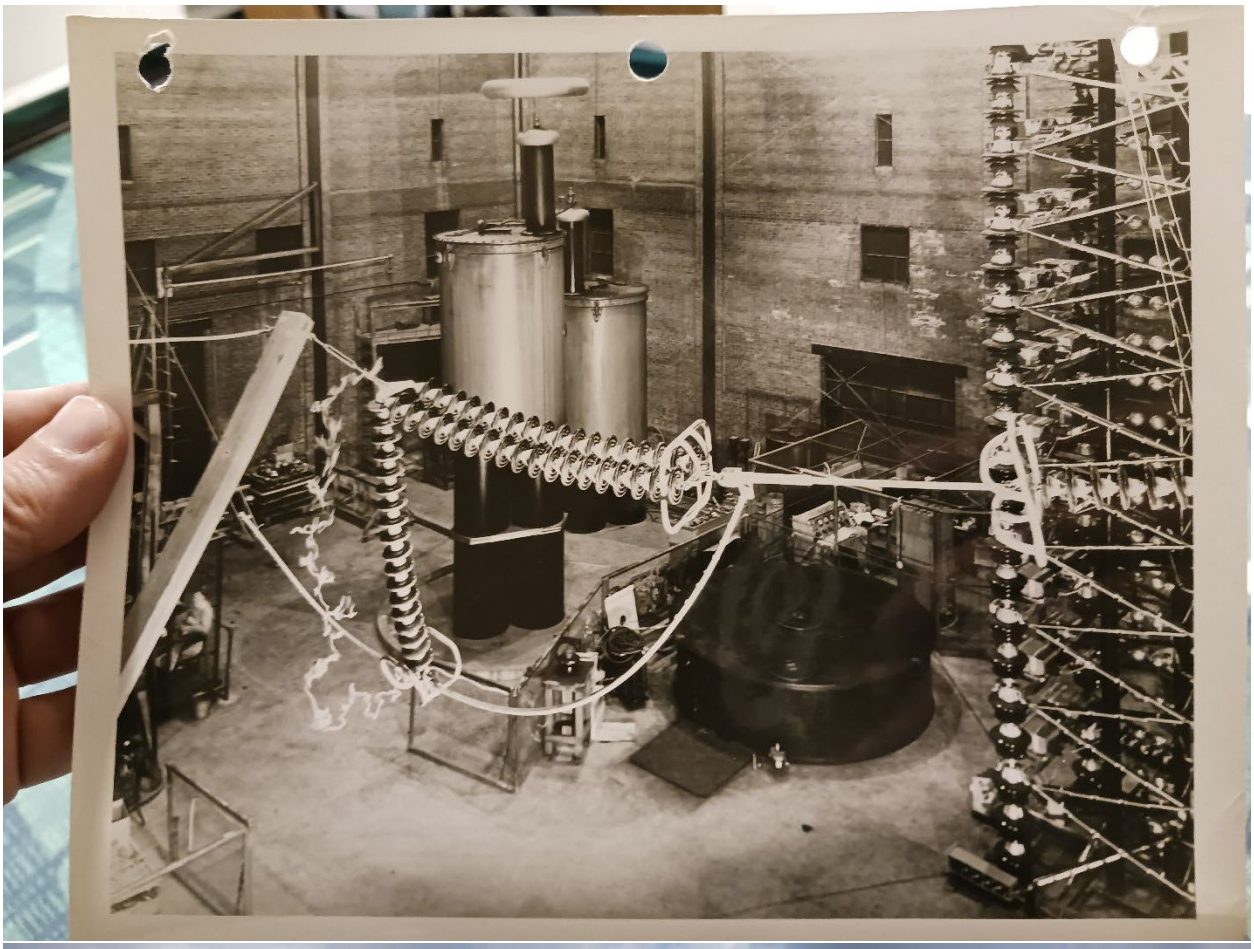


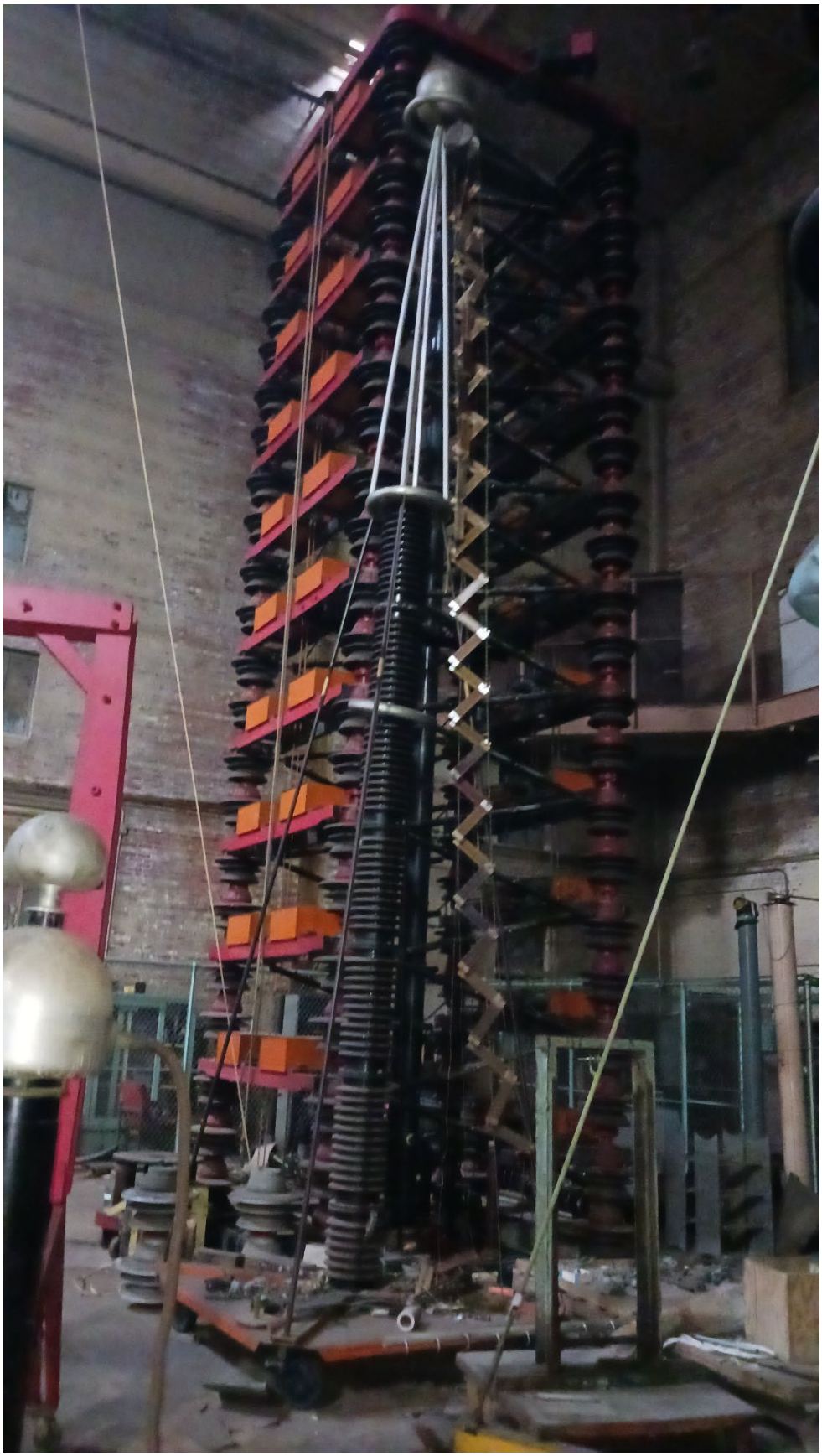


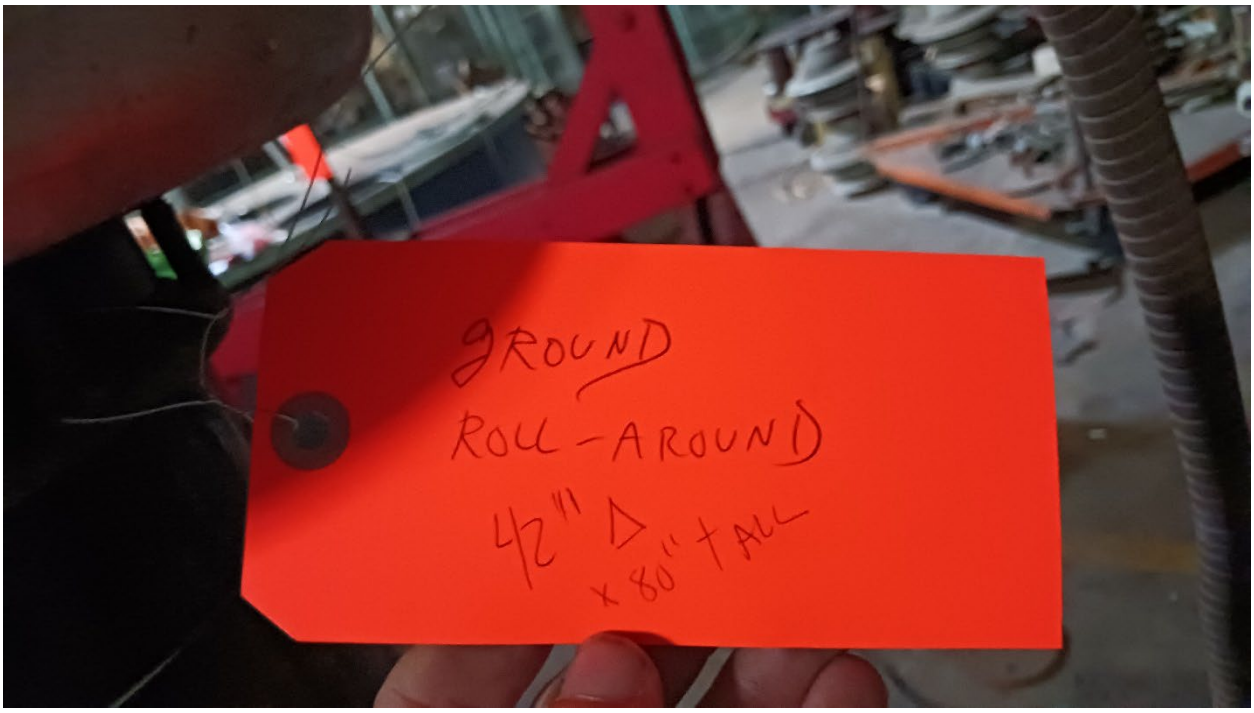


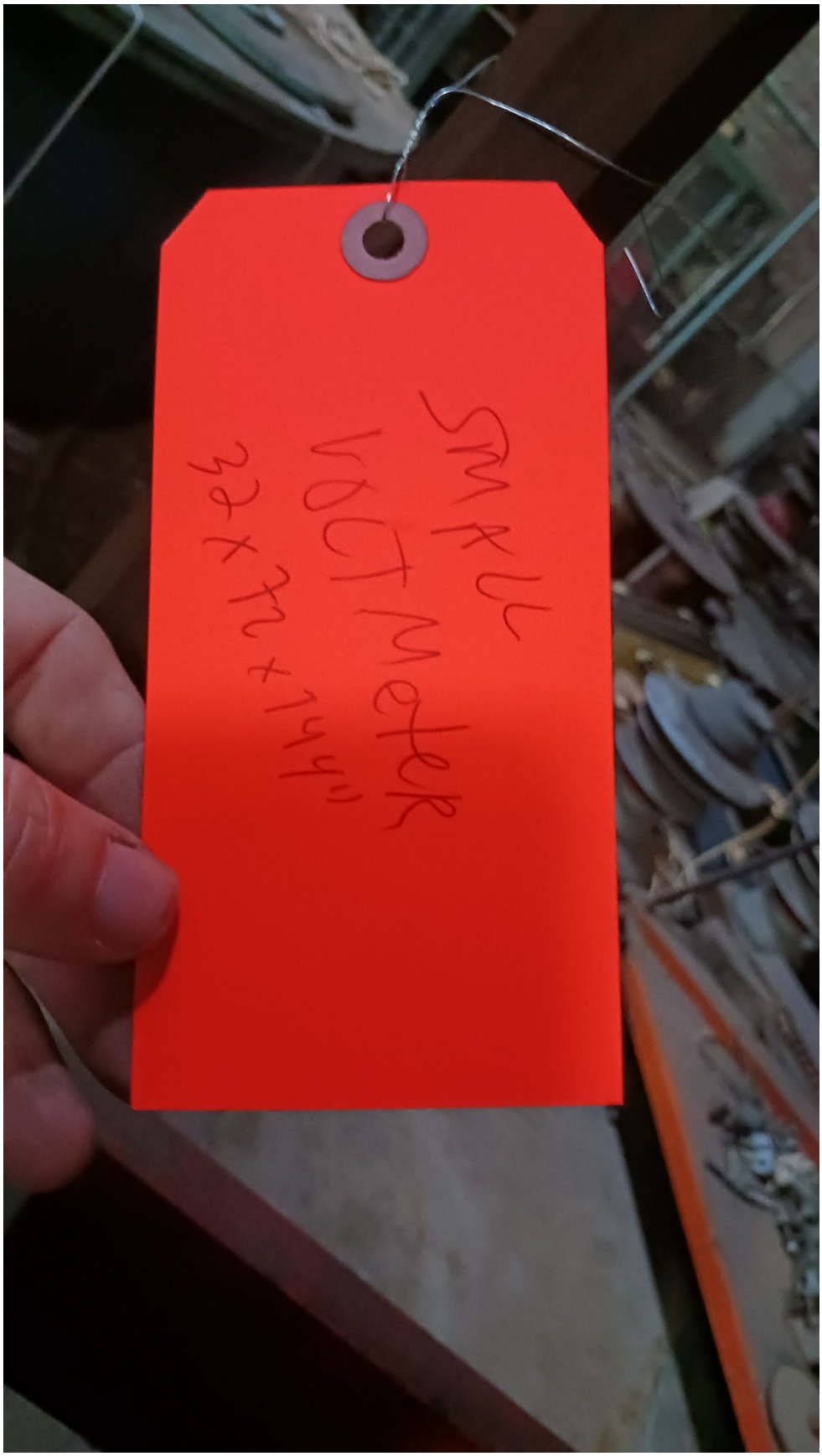


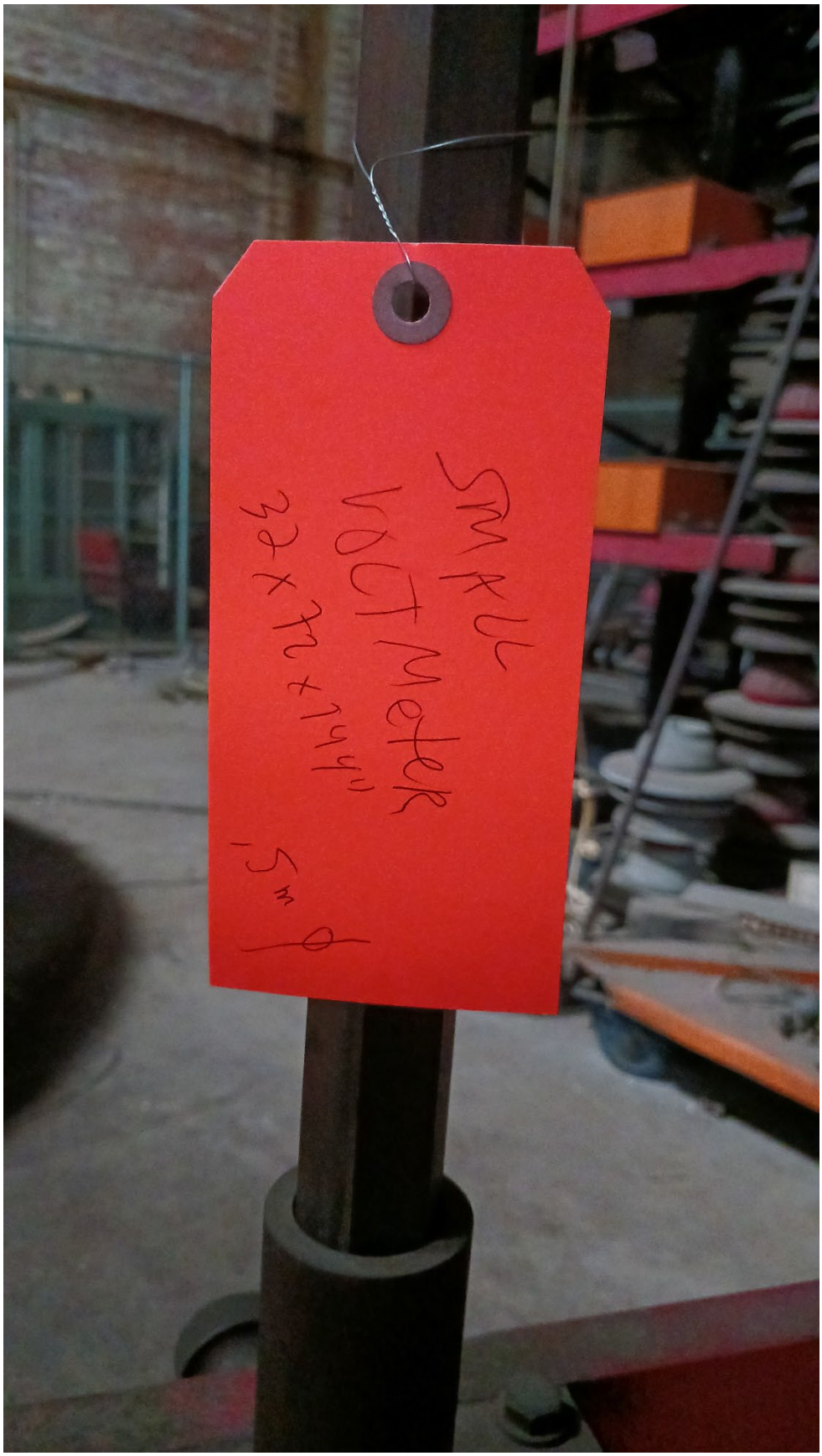
REDUCE POINT

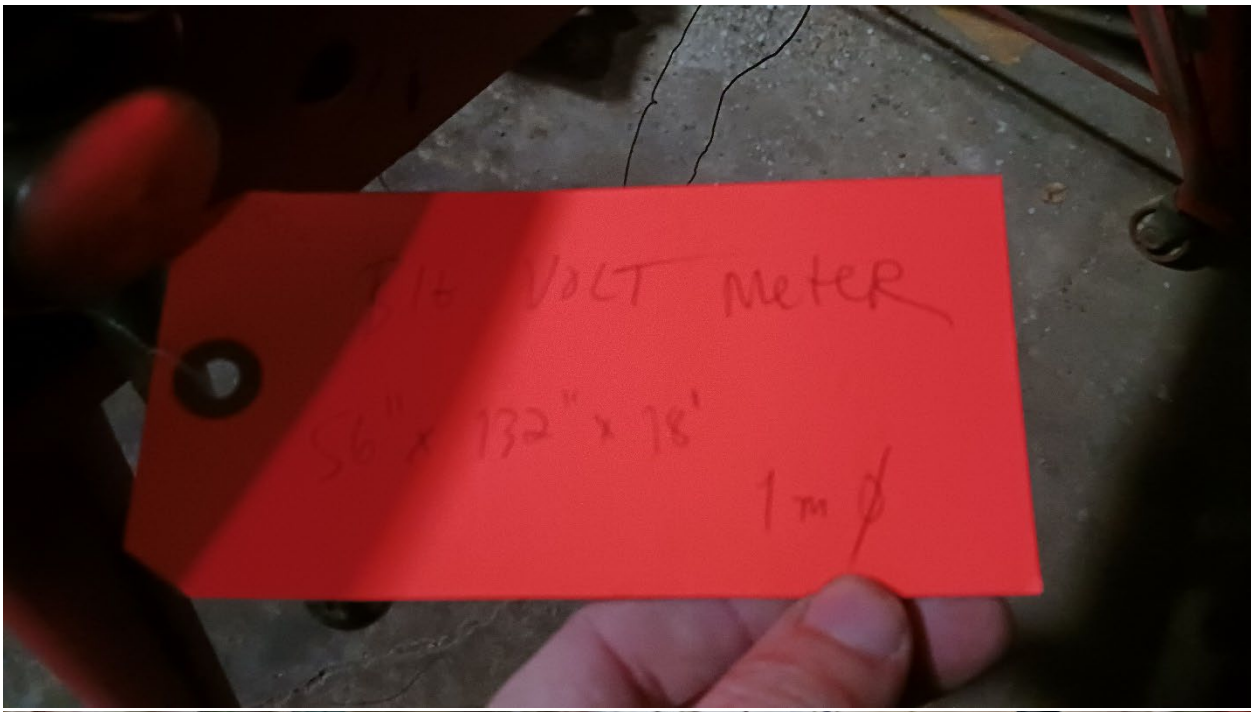


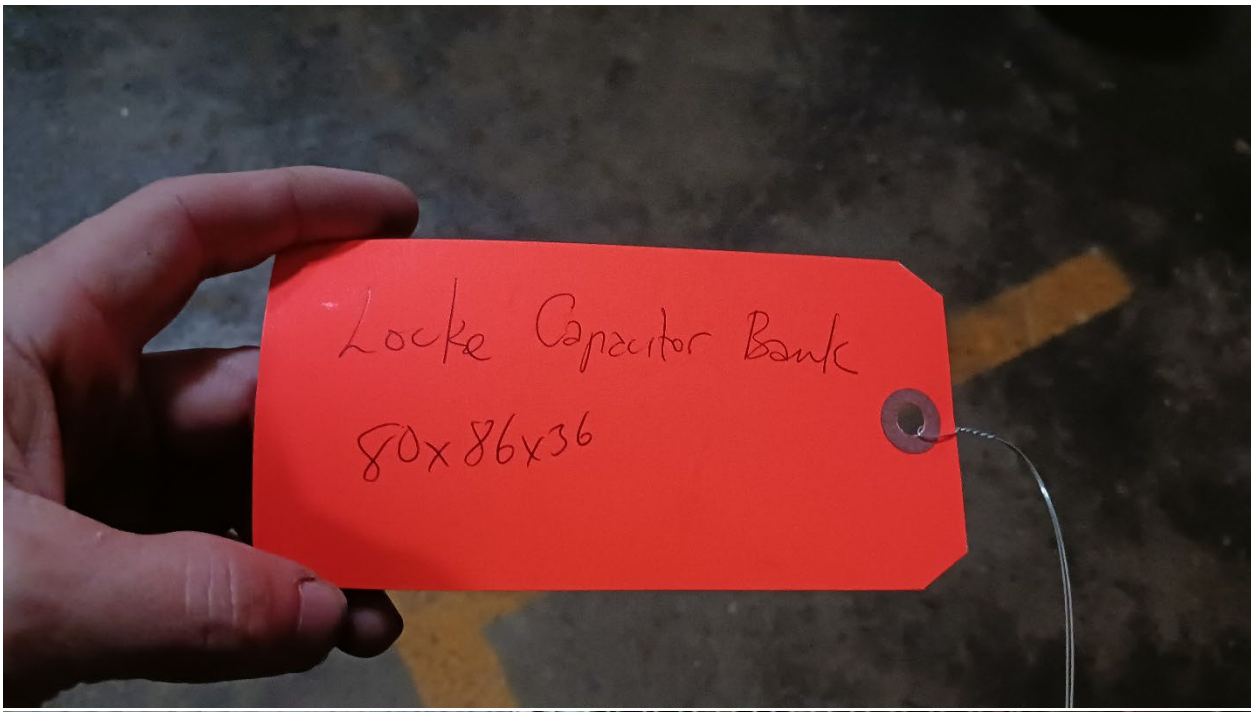



GROUND
ROLL-AROUND
42" Δ
x 80" TALL

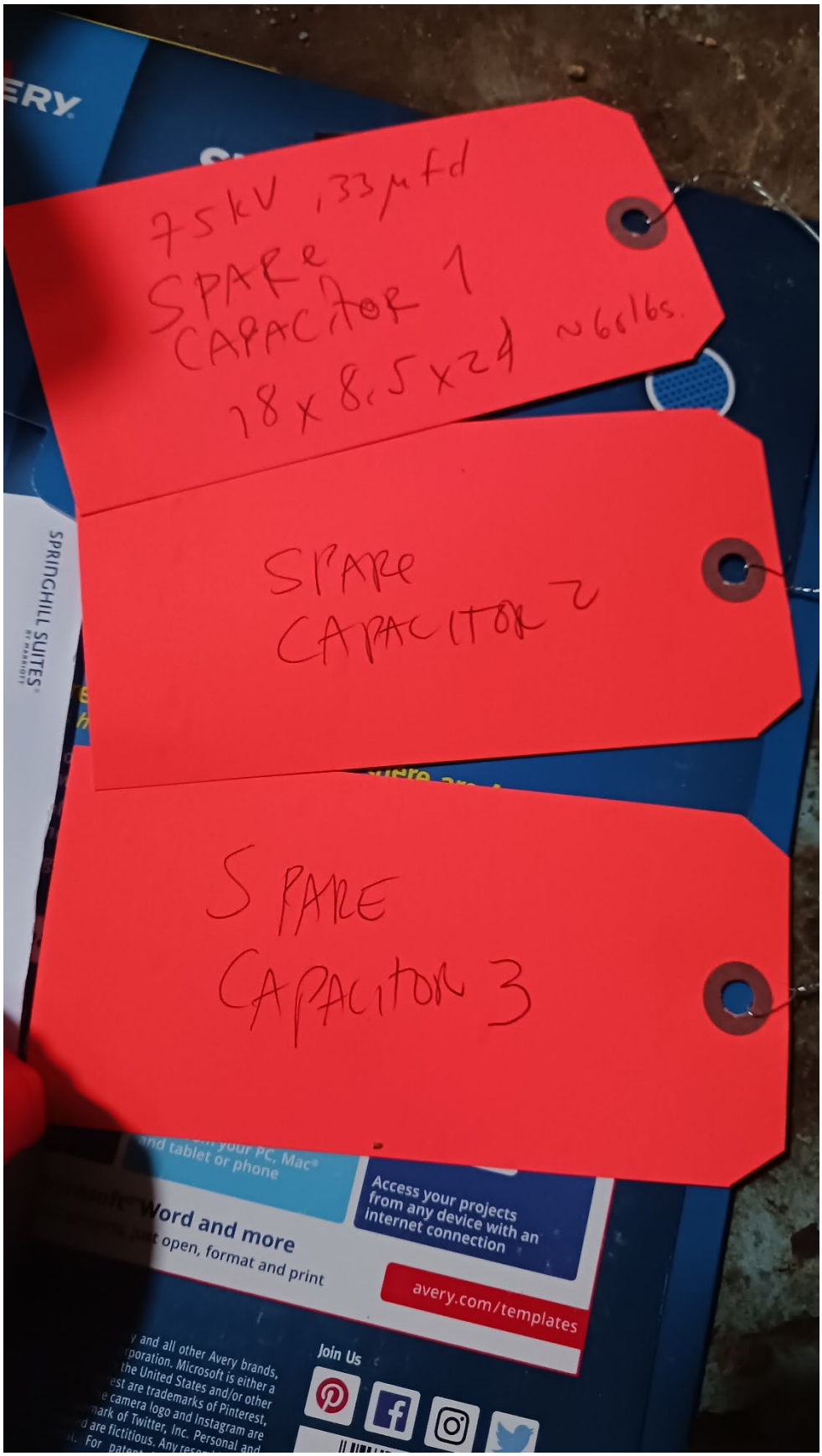

SMALL
VOLTMeter
32" x 22" x 144"

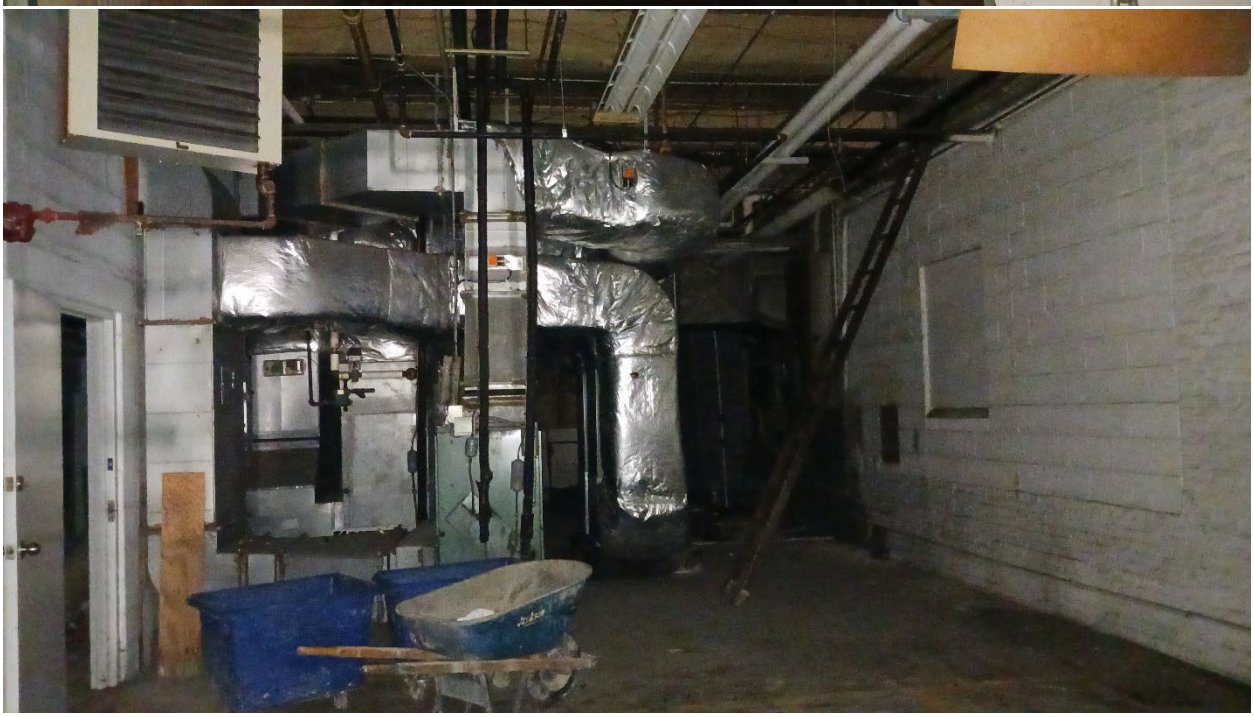

SMALL
VOLTMeter
32x72x144"
1.5m

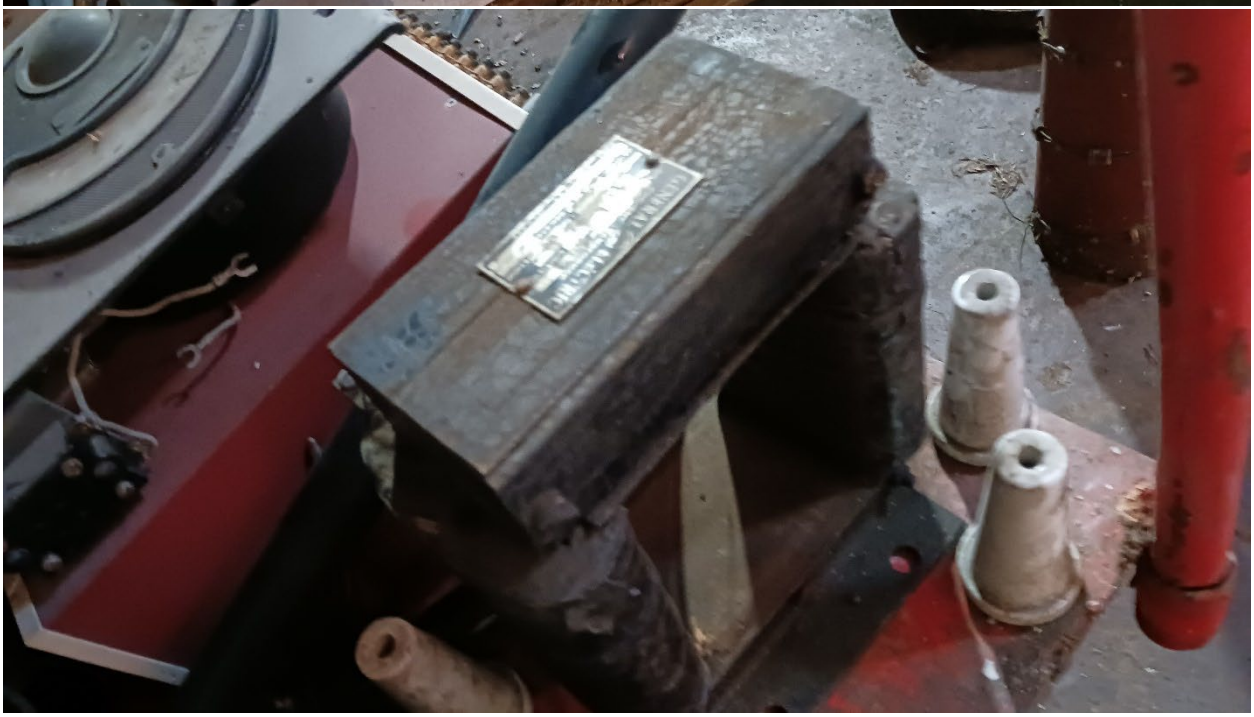

VOLT Meter
56" x 132" x 18"
1 ph

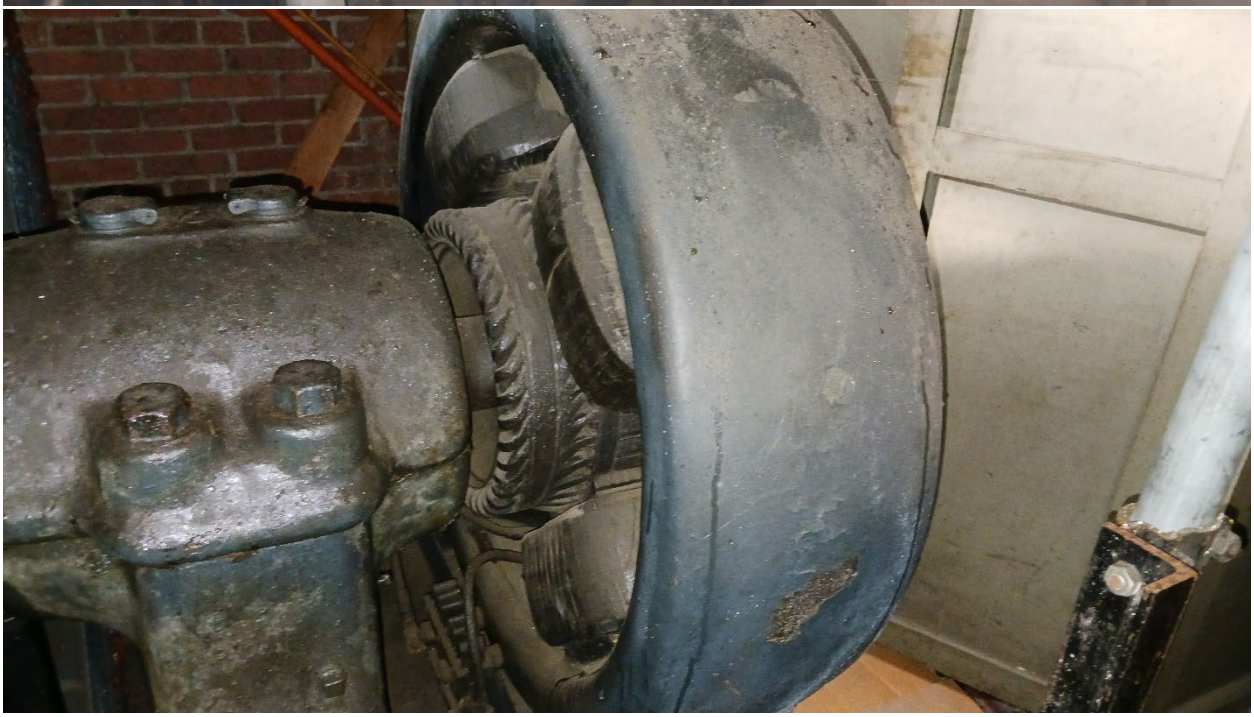

Locke Capacitor Bank
80x86x36

ELECTRIC
ACITOR
VOLTS
MFD
CONN DIA

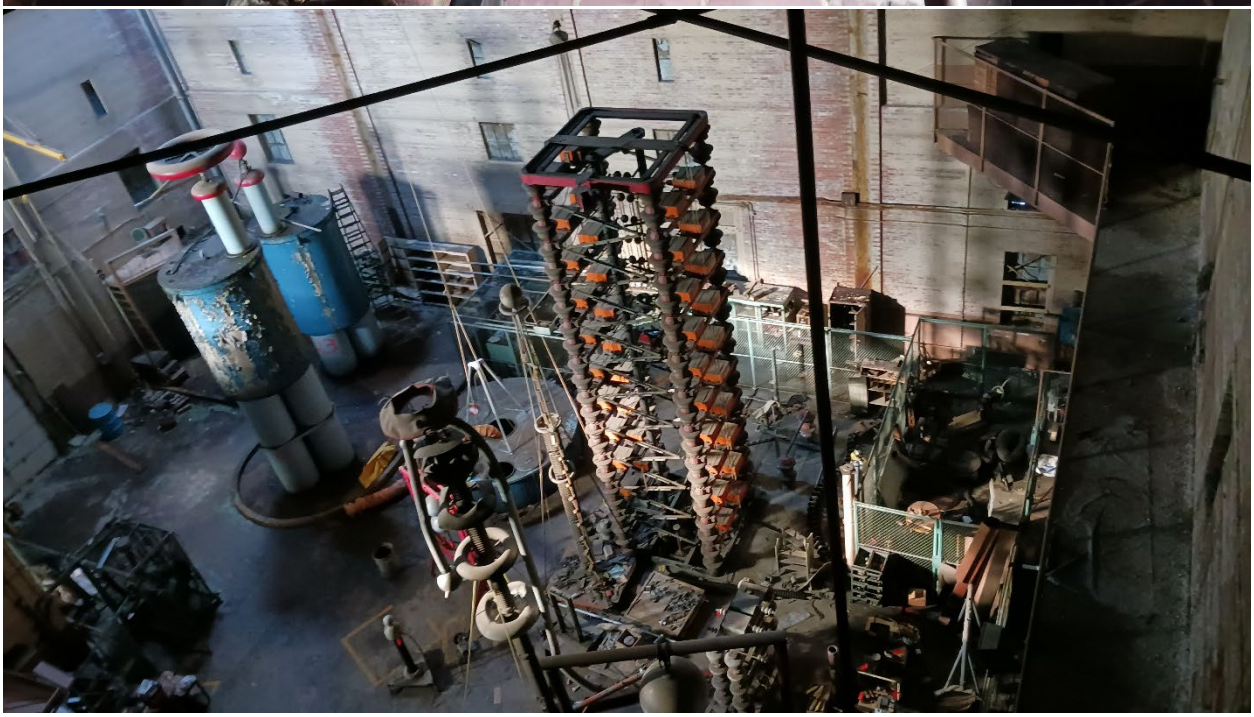

7.5kV .33µfd
SPARE
CAPACITOR 1
18 x 8.5 x 24 ~66lbs.
SPARE
CAPACITOR 2
SPARE
CAPACITOR 3
SPRINGHILL SUITES
Access your projects from any device with an internet connection
avery.com/templates
Join Us



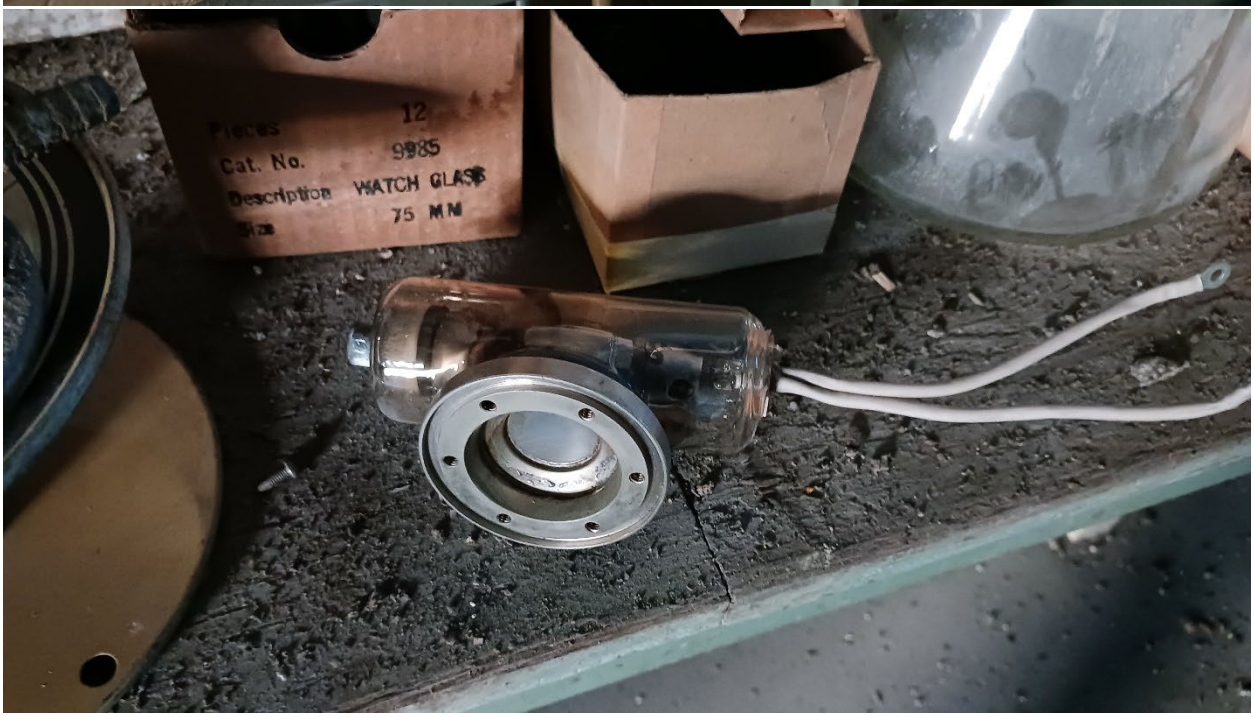




CURRENT GENERATOR
COMPOUND
FORM
GENERAL ELECTRIC CO.
SCHENECTADY, N.Y. U.S.A.



Glyptal
G1514
WARNING!


Pieces 12
Cat. No. 9985
Description WATCH GLASS
75 MM

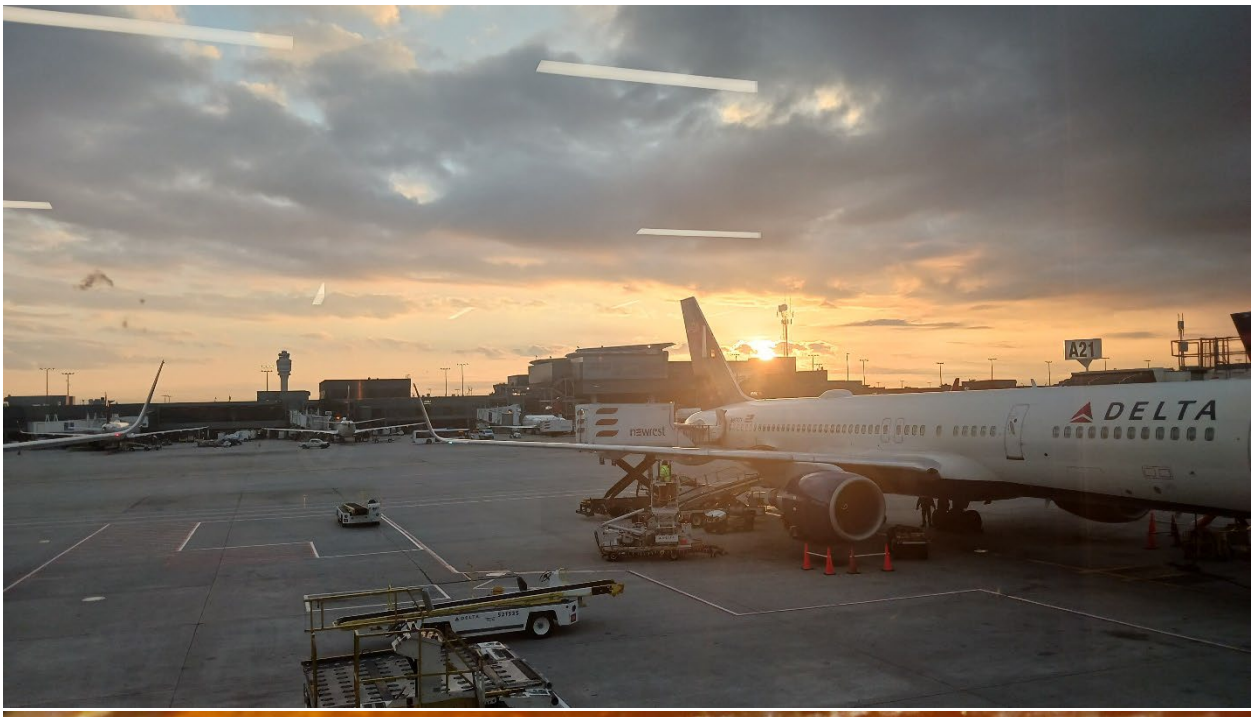
OFF
OFF

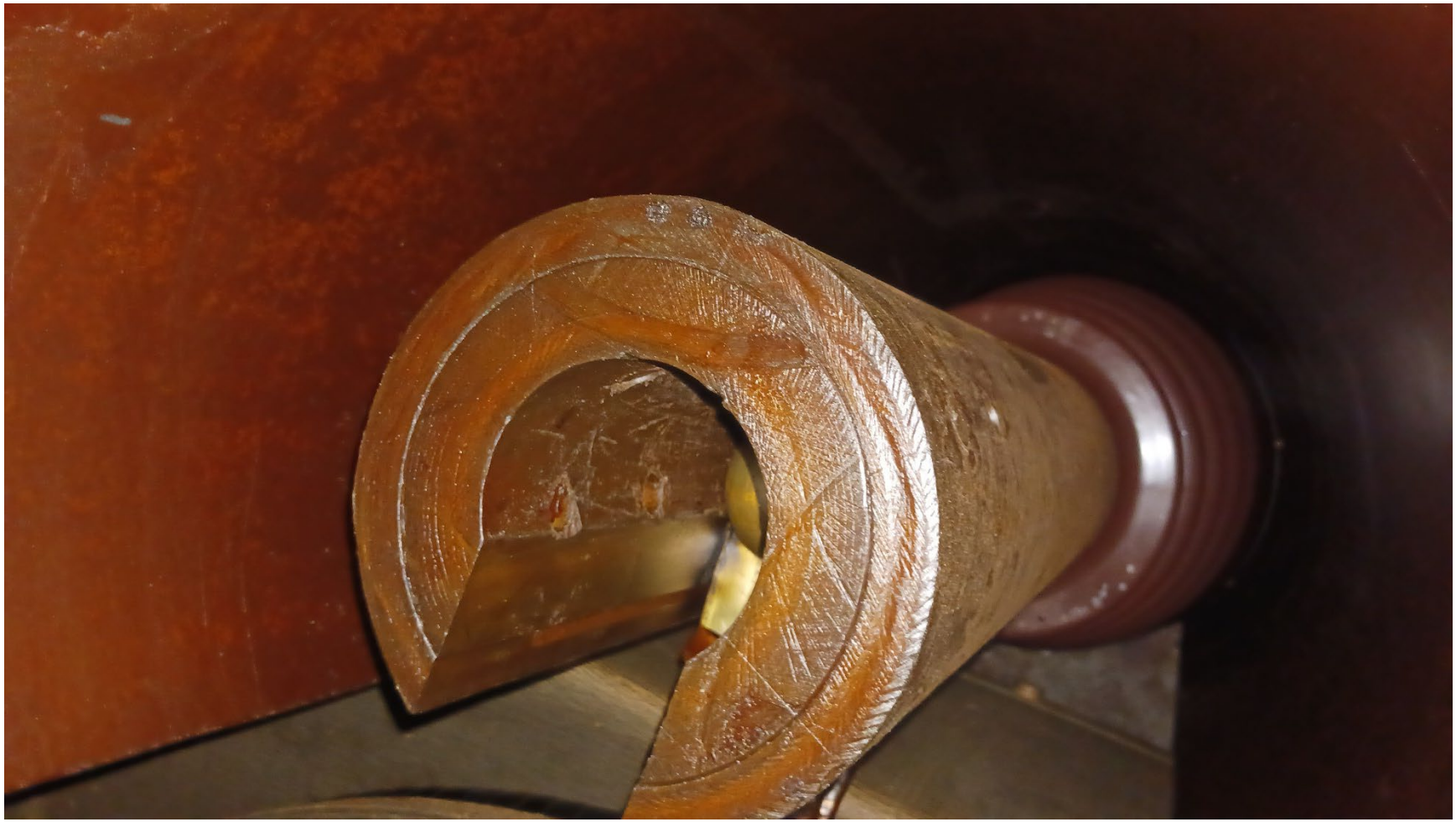
CAUTI
ADIOACTIVE

LEAK TEST
CERTIFICATE
3 mCi
HEALTH PHYSICS ASSOCIATES

SPRINGFIELD

DRAIN

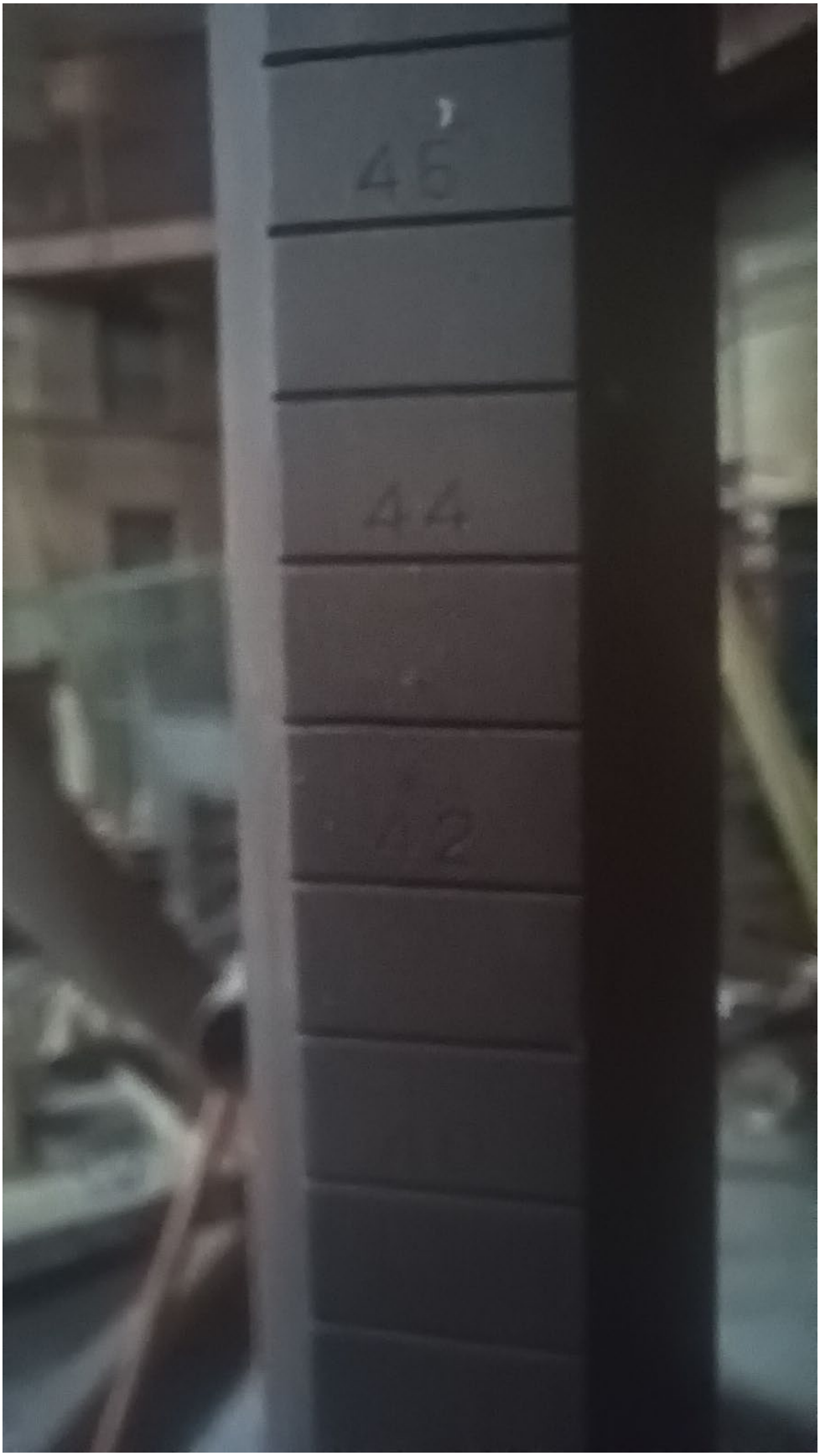

A21
DELTA

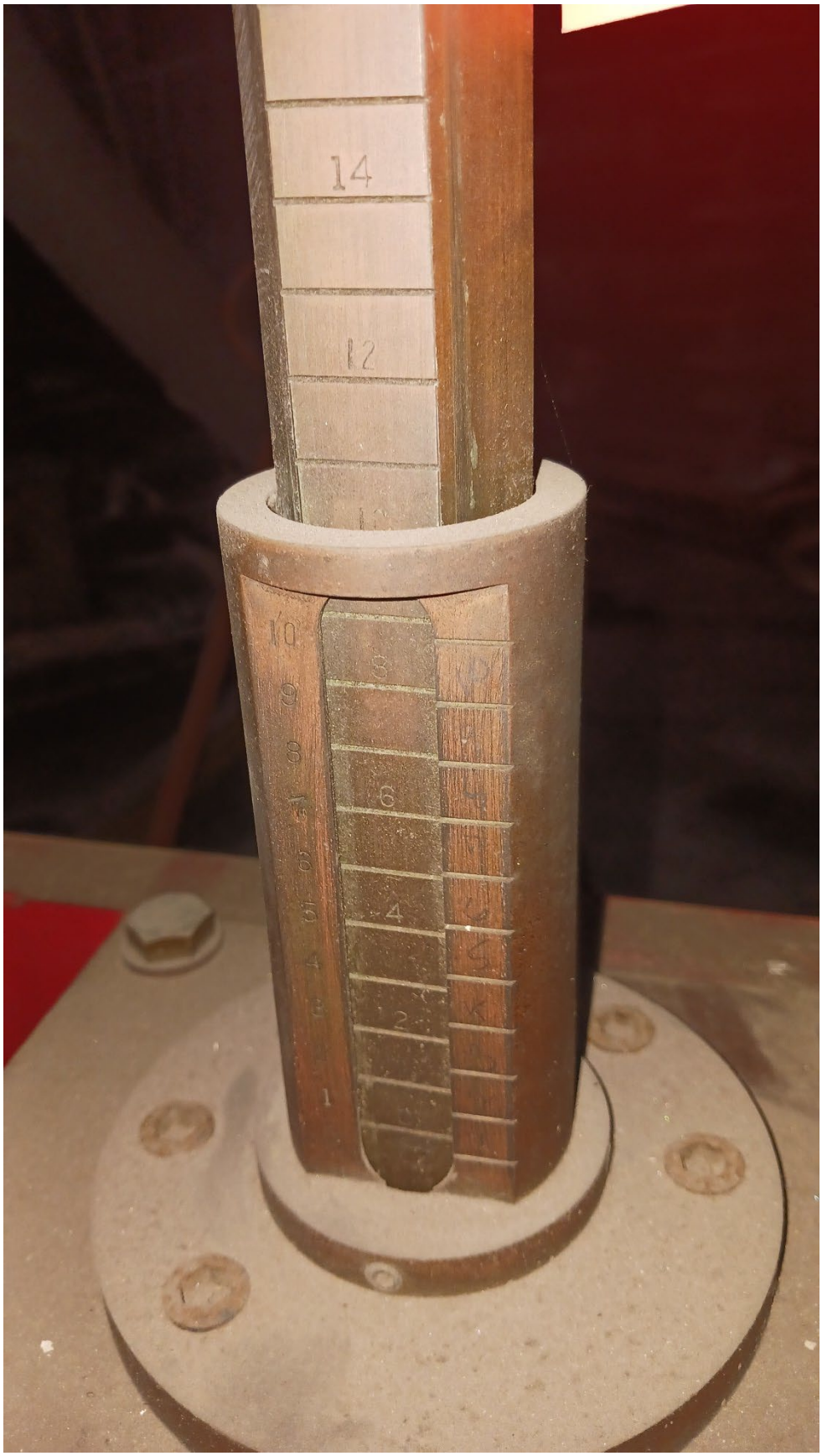


GLENMORE PROFESSIONAL
6308 BELAIR ROAD
Time
Mon.
Tues.
Wed.
Thurs.
Fri.
Sat. July 10 9:00 AM
A 24 Hour Notification of
Cancellation is Appreciated.
Phone: CLifton 4-5088

SAFTI KLEEN Products Co.
AUTOMOTIVE SUPPLIES
TRAINS
Appointed & Authorized

EDWARD F. CULLEN
625-5919


46
44
42


14
12
10
9
8
6
4
2
1

1970 1971 RECEIPT NO. 172

Bro. Norman J. Tayler

IS A MEMBER IN GOOD STANDING OF

Towson, Maryland, Lodge No. 469

HAS PAID DUES TO April 1 71 1761

Member's Number

Secretary

SEE REVERSE SIDE FOR MEMBER'S HOME ADDRESS

SOCIAL SECURITY ACT

ACCOUNT NUMBER

218-26-5605

NORMAN JAMES TAYLOR, JR.

Norman James Taylor Jr.

MARYLAND OPERATOR LICENSE EC

T-460-636-367-562 R

OPERATOR'S LICENSE NUMBER

JUL 1971

MO. EXPIRATION YEAR

HEIGHT	WEIGHT	RACE	SEX	BIRTH DATE
6-00	185	W	M	07/16/29

RESTRICTIONS

NORMAN JAMES TAYLOR JR
5 PICKETT GARTH
LUTHERVILLE MD BA CO

COMMISSIONER

Norman James Taylor Jr.

WRITTEN SIGNATURE OF OPERATOR

TUERKE & BECKERS

GENERAL ELECTRIC

Name of Employee NJ TAYLOR JR

Social Security or Pay Number 218 26 5605

Coverage for EMPLOYEE

BENEFITS FOR ALL UNPAID COVERED MEDICAL EXPENSES BILLE
HOSPITAL WILL BE PAID DIRECTLY TO THE HOSPITAL.

This card is issued for the convenience of the employees and the
It is not a guarantee that coverage is in effect. For verification of
please contact the General Electric component shown below.

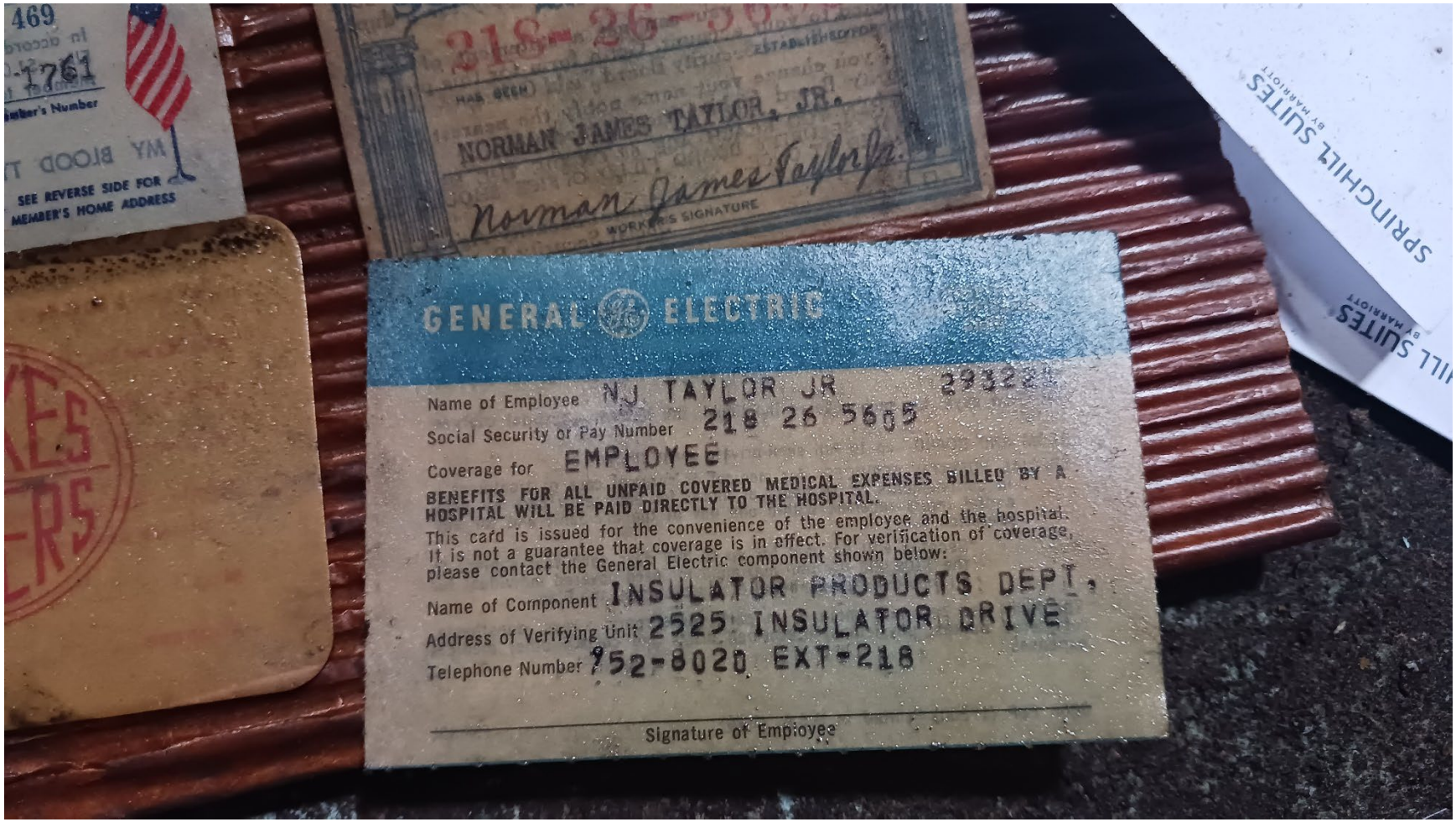
Name of Component INSULATOR PRODUCTS

Address of Verifying Unit 2525 INSULATOR D

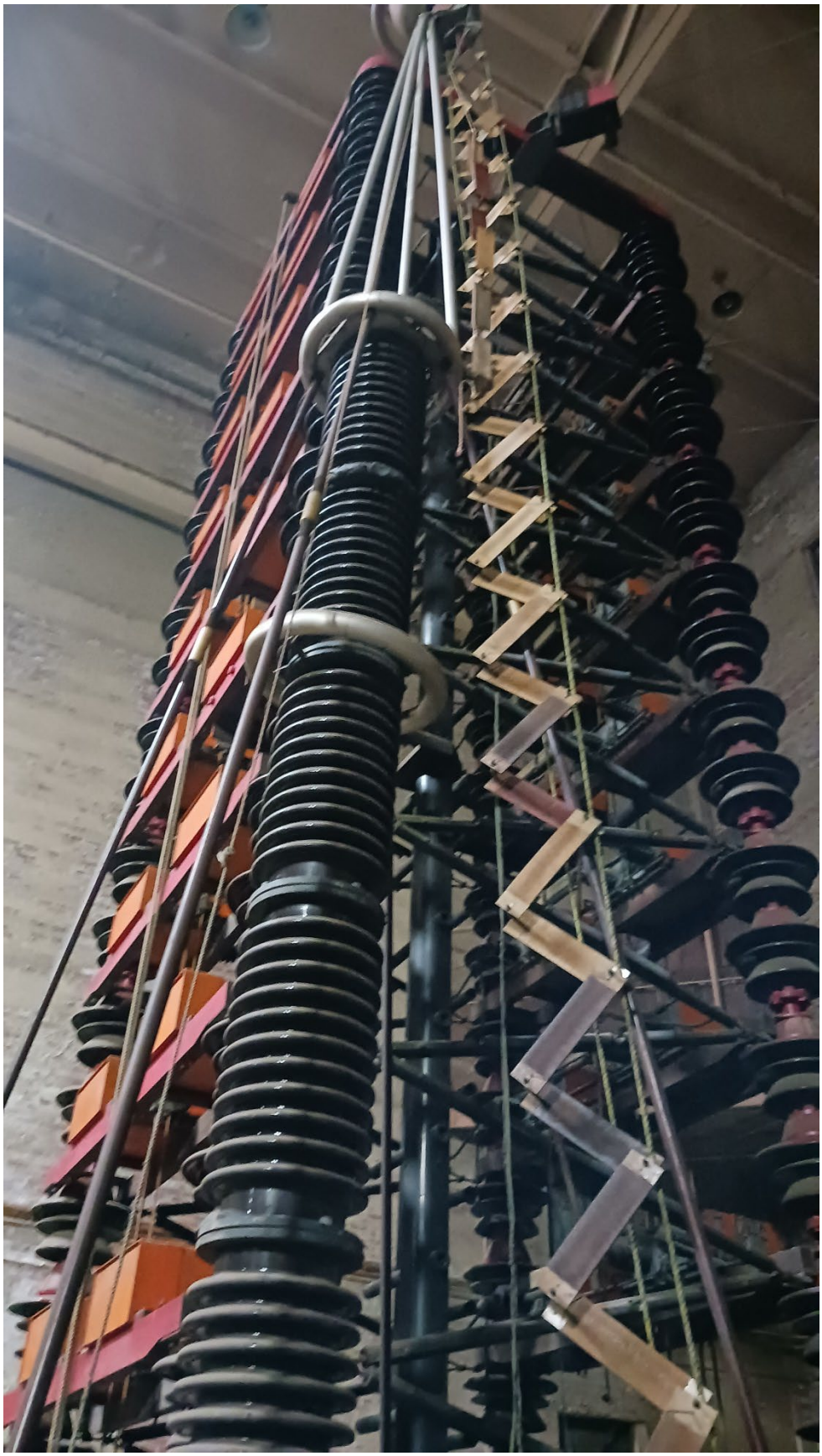
Telephone Number 752-8020 EXT-218

Signature of Employee

GOOD STANDING OF
Lodge No. 469
SEE REVERSE SIDE FOR MEMBER'S HOME ADDRESS
SOCIAL SECURITY ACT
ACCOUNT NUMBER
218-26-5605
GENERAL ELECTRIC
HOSPITAL IDENTIFICATION CARD
TAYLOR JR
293221
218 26 5605
EMPLOYEE
SPRINGHILL SUITES
SPRINGHILL SUITES


469
1761
SEE REVERSE SIDE FOR MEMBER'S HOME ADDRESS
218-26-5605
NORMAN JAMES TAYLOR, JR.
Norman James Taylor Jr.
GENERAL ELECTRIC
Name of Employee NJ TAYLOR JR 293224
Social Security or Pay Number 218 26 5605
Coverage for EMPLOYEE
BENEFITS FOR ALL UNPAID COVERED MEDICAL EXPENSES BILLED BY A HOSPITAL WILL BE PAID DIRECTLY TO THE HOSPITAL.
This card is issued for the convenience of the employee and the hospital. It is not a guarantee that coverage is in effect. For verification of coverage, please contact the General Electric component shown below:
Name of Component INSULATOR PRODUCTS DEPT.
Address of Verifying Unit 2525 INSULATOR DRIVE
Telephone Number 952-8020 EXT-218
Signature of Employee
SPRINGHILL SUITES BY MARRIOTT

SOCIAL SECURITY ACT
ACCOUNT NUMBER
218-26-5605
NORMAN JAMES TAYLOR, JR.
Norman James Taylor Jr.
WORKER'S SIGNATURE



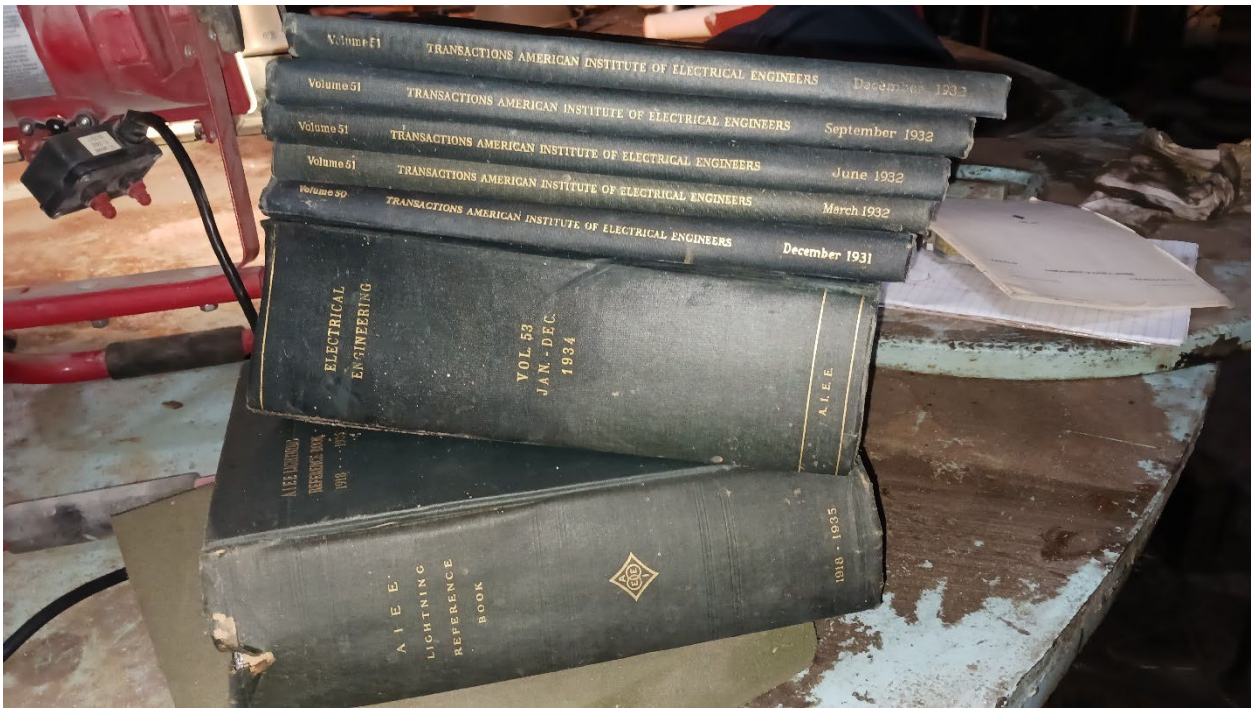
2911

GENERAL ELECTRIC
40:1

OHMITE
OHMITE
OHMITE
OHMITE

OHMITE
OHMITE
OHMITE
OHMITE

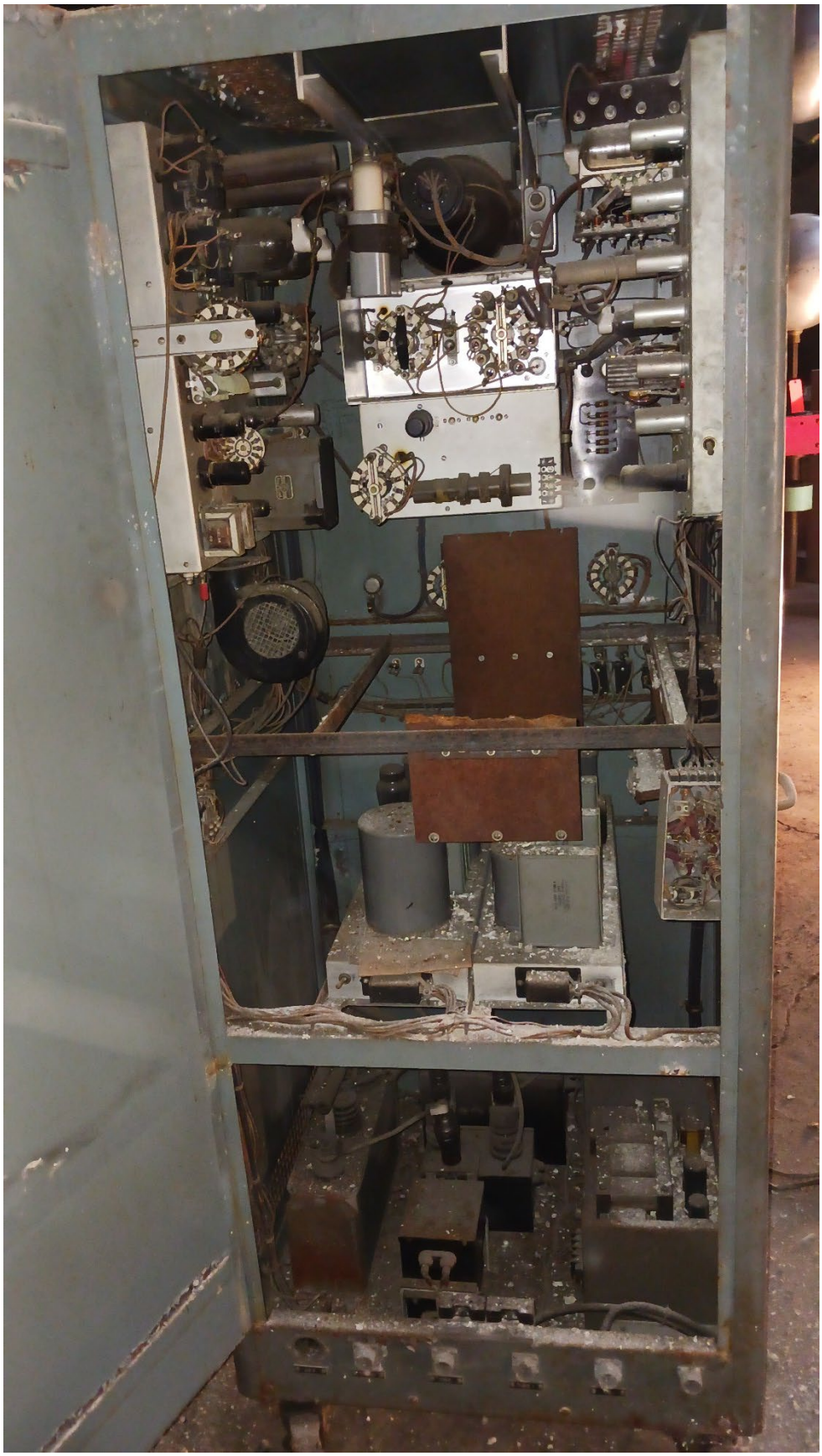
MODERN NO. 1514C
RED ROPE FILE POCKET
MODERN STATIONERY & PRINTING CO.
BALTIMORE MD.

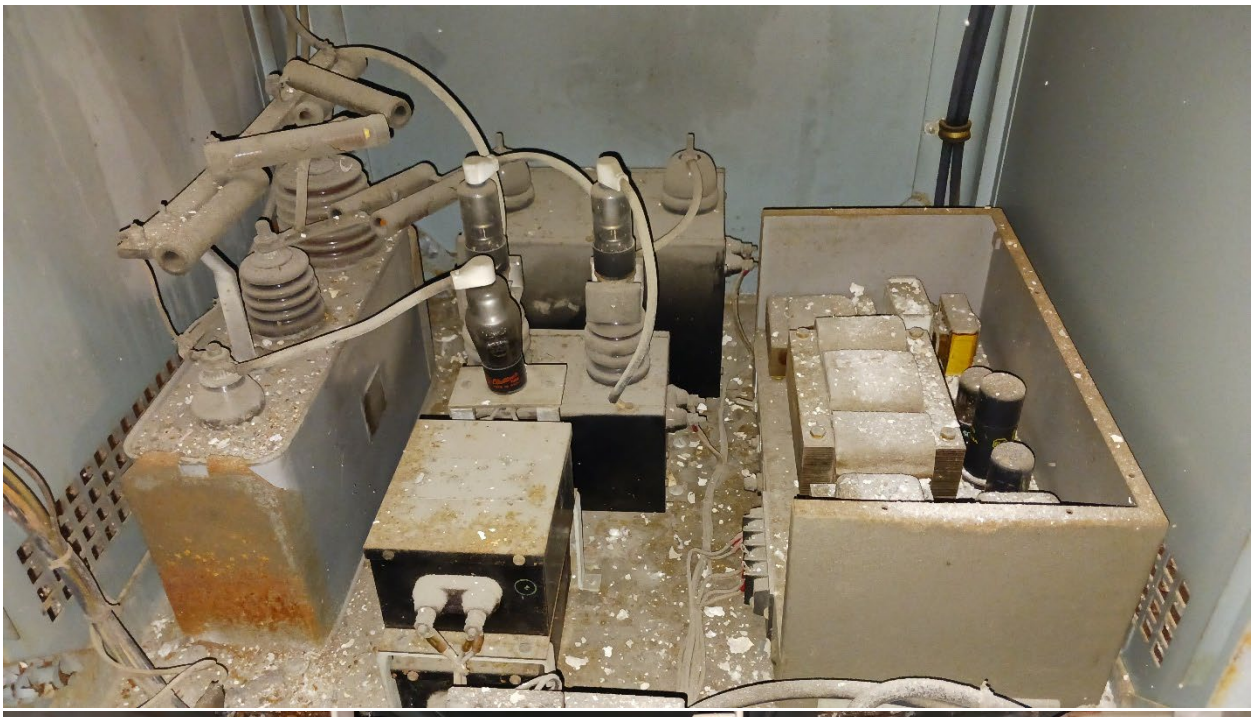

Volume 51
TRANSACTIONS AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
Volume 51
TRANSACTIONS AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
September 1932
Volume 51
TRANSACTIONS AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
June 1932
Volume 50
TRANSACTIONS AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
March 1932
TRANSACTIONS AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
December 1931
ELECTRICAL ENGINEERING
VOL. 53
JAN. - DEC.
1934
A.I.E.E.
A I E E
LIGHTNING
REFERENCE
BOOK
1918 - 1935

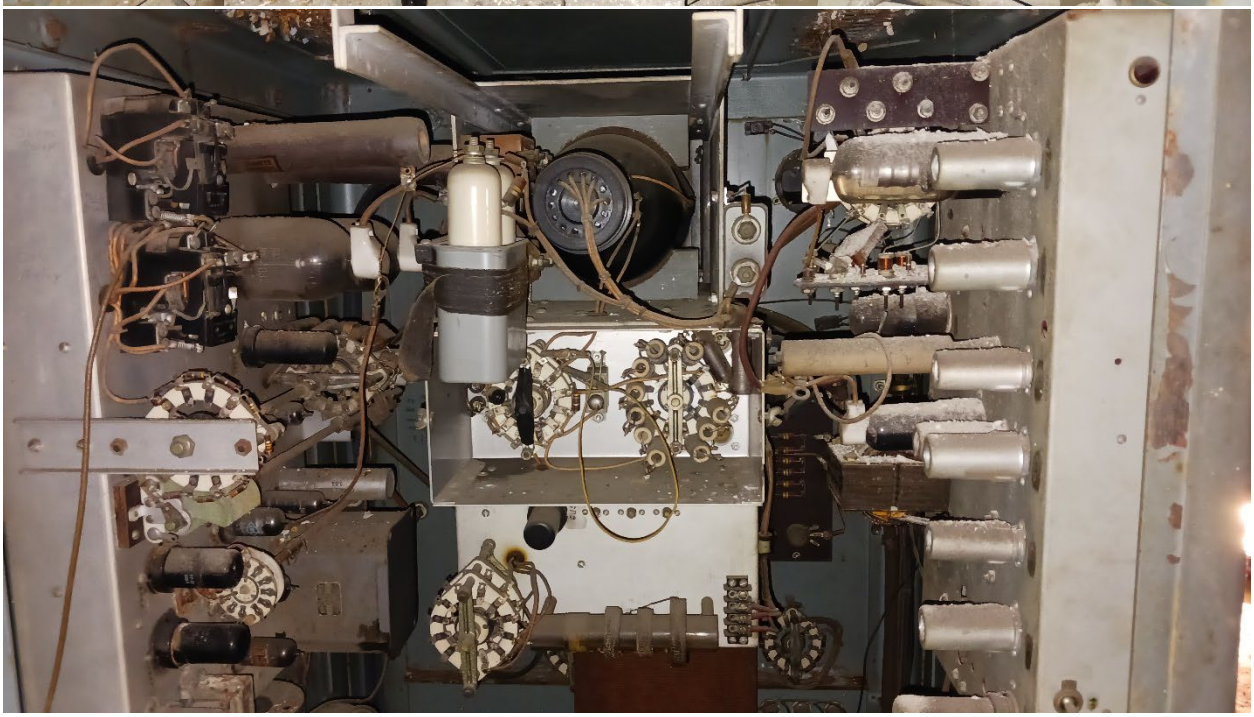
PART NO
WP-08001- KC01
QUANTITY: 920

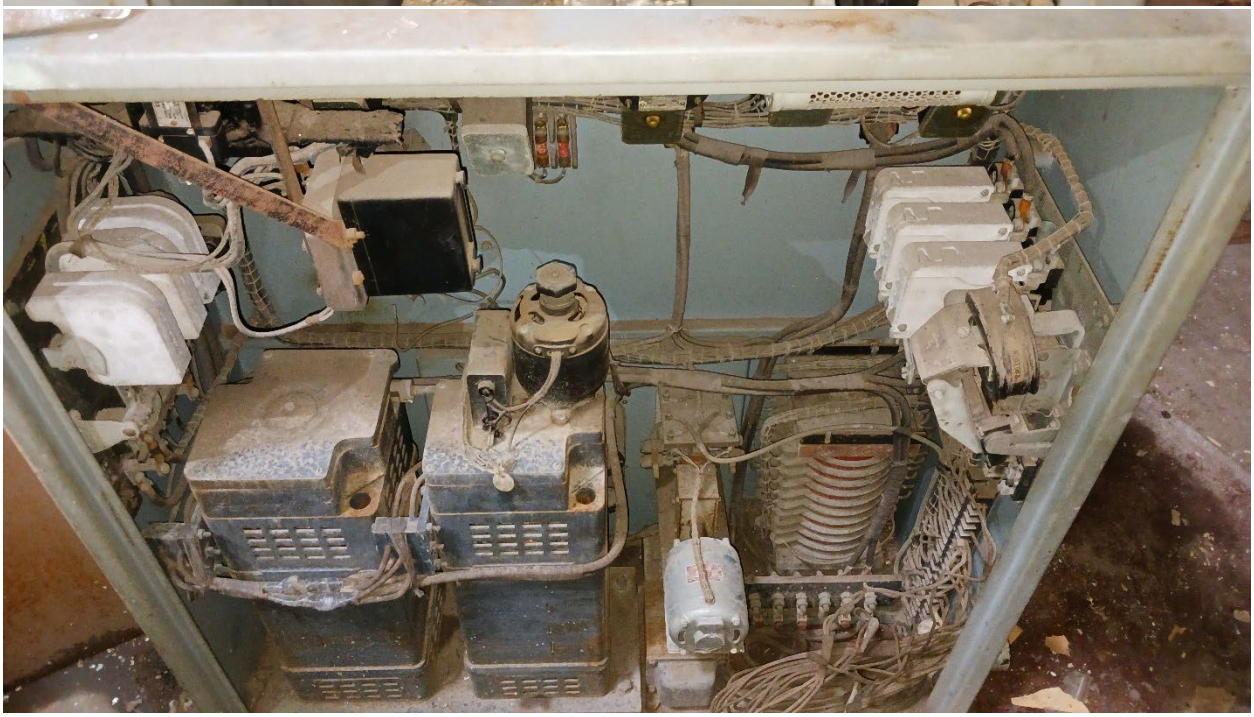
KEEP DRY
MANTER SECO

Yale

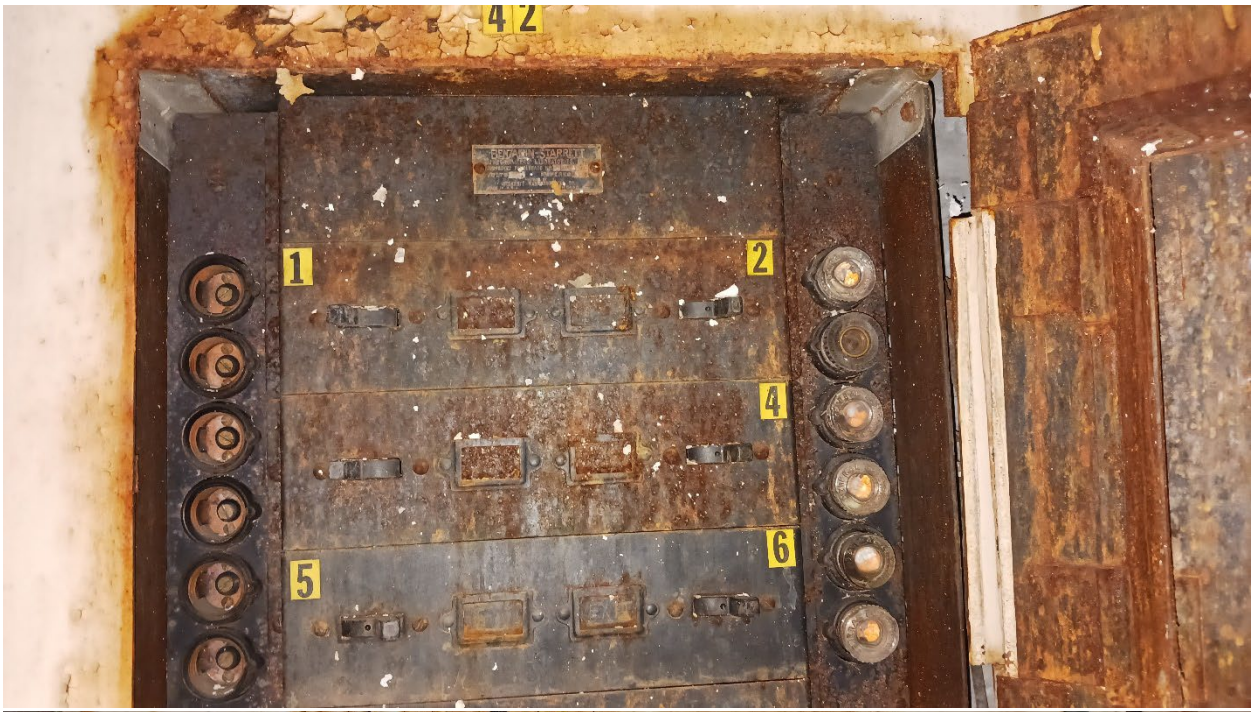




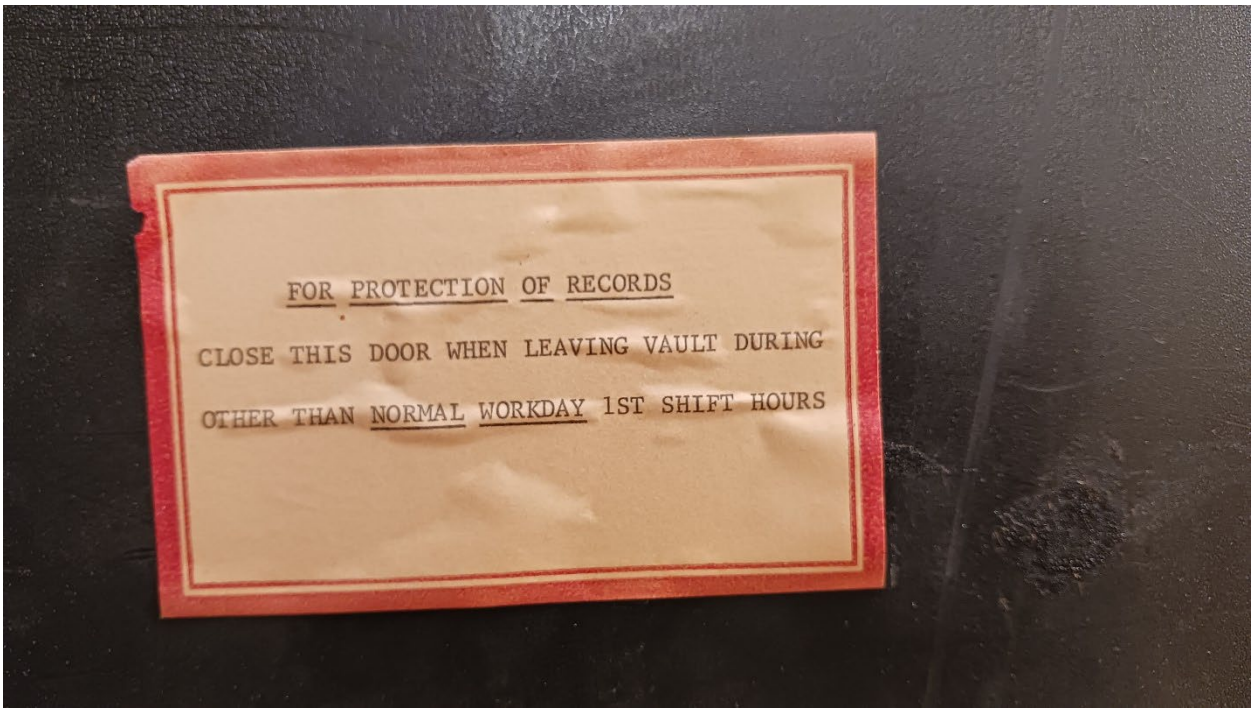




DANGER
HIGH
DANGER
HIGH
VOLTAGE


4 2
1
2
4
6
5

4 2
25 CYC


FOR PROTECTION OF RECORDS
CLOSE THIS DOOR WHEN LEAVING VAULT DURING
OTHER THAN NORMAL WORKDAY 1ST SHIFT HOURS

Certificate

No. 6

For _____ Shares

Issued to

_____

Dated _____ 19__

From whom transferred

_____

Dated _____ 19__

No. Original Certificate.	No. Original Shares.	No. of Shares Transferred.

Received Certificate No

for _____ Shares

this _____ day of _____ 19__

_____

Cancelled by issue of _____

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

The Symington Corporation

CAPITAL STOCK $1,000,000.00

This Certifies that _____ is the owner of

_____ Shares of the Common Stock of

THE SYMINGTON CORPORATION

Transferable only on the books of the Corporation by the holder hereof in person, or by Attorney upon surrender of this Certificate properly endorsed.

In Witness Whereof the said Corporation has caused this Certificate to be signed by its duly authorized officers and to be sealed with the Seal of the Corporation.

This _____ day of _____ A.D. 19__

PRESIDENT _____ TREASURER _____

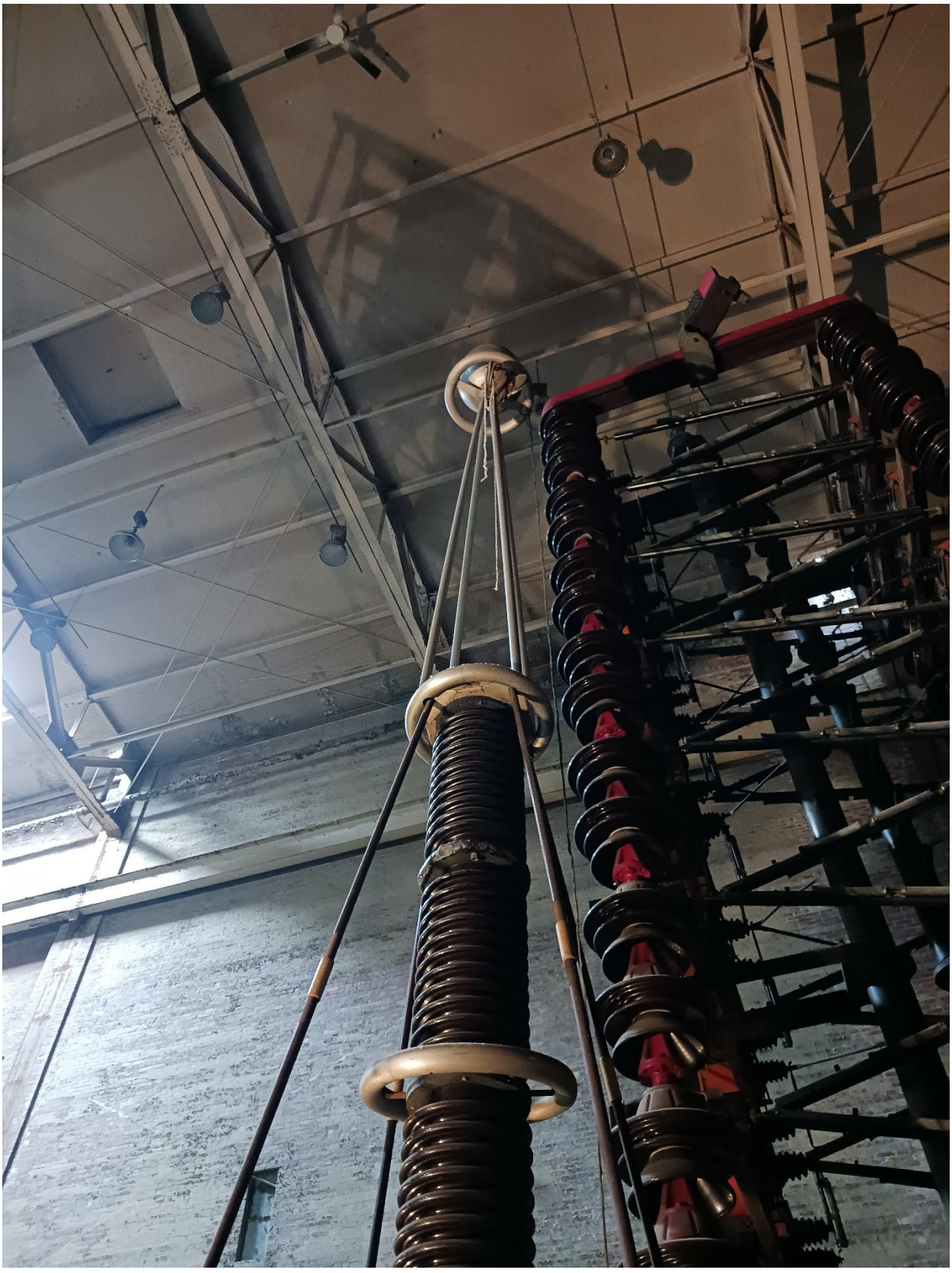
SHARES $100.00 EACH

FULL PAID AND NON-ASSESSABLE

1 TON CAP

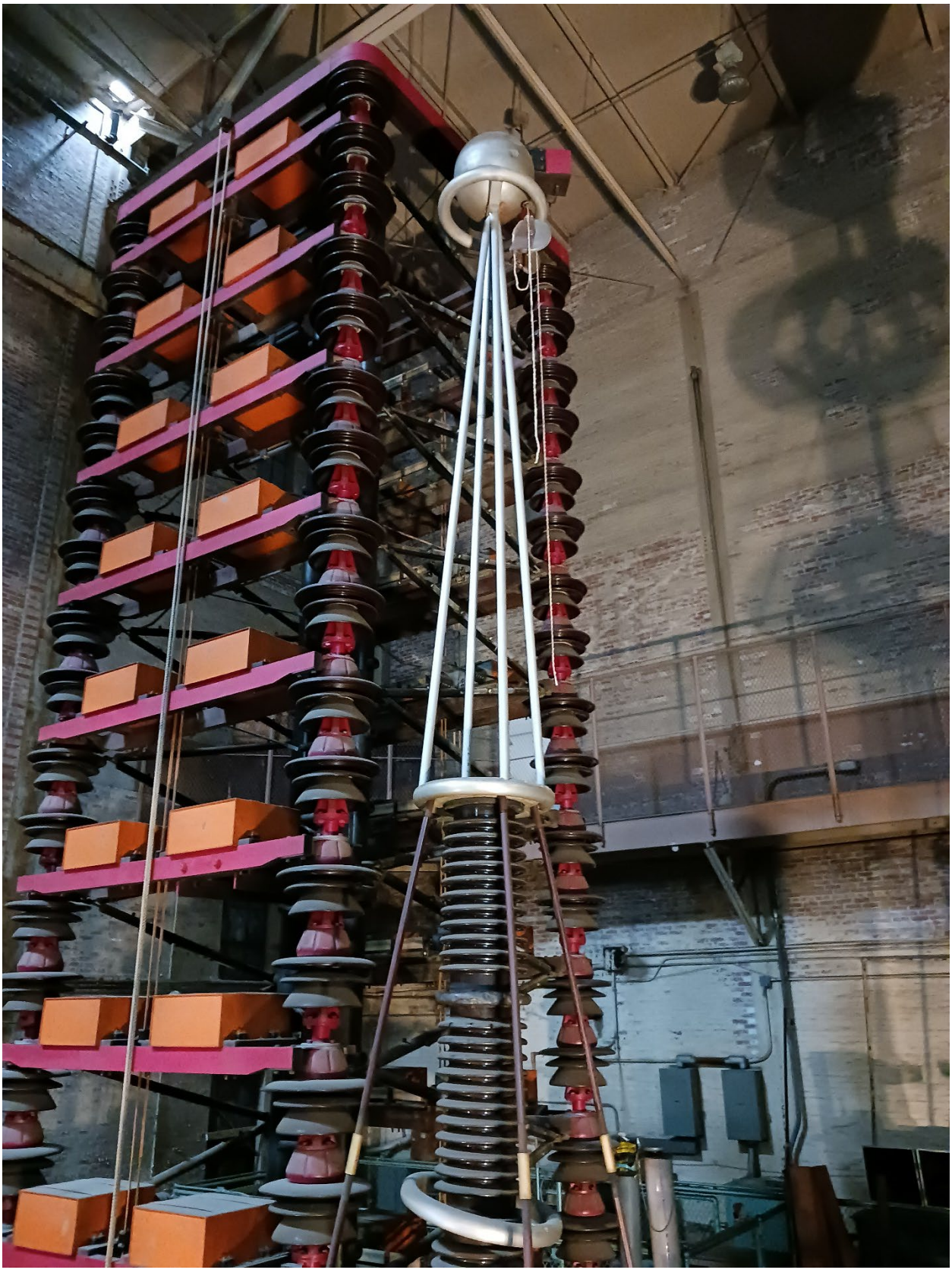
PART NO.
WP-08001-KC01
QUANTITY : 920

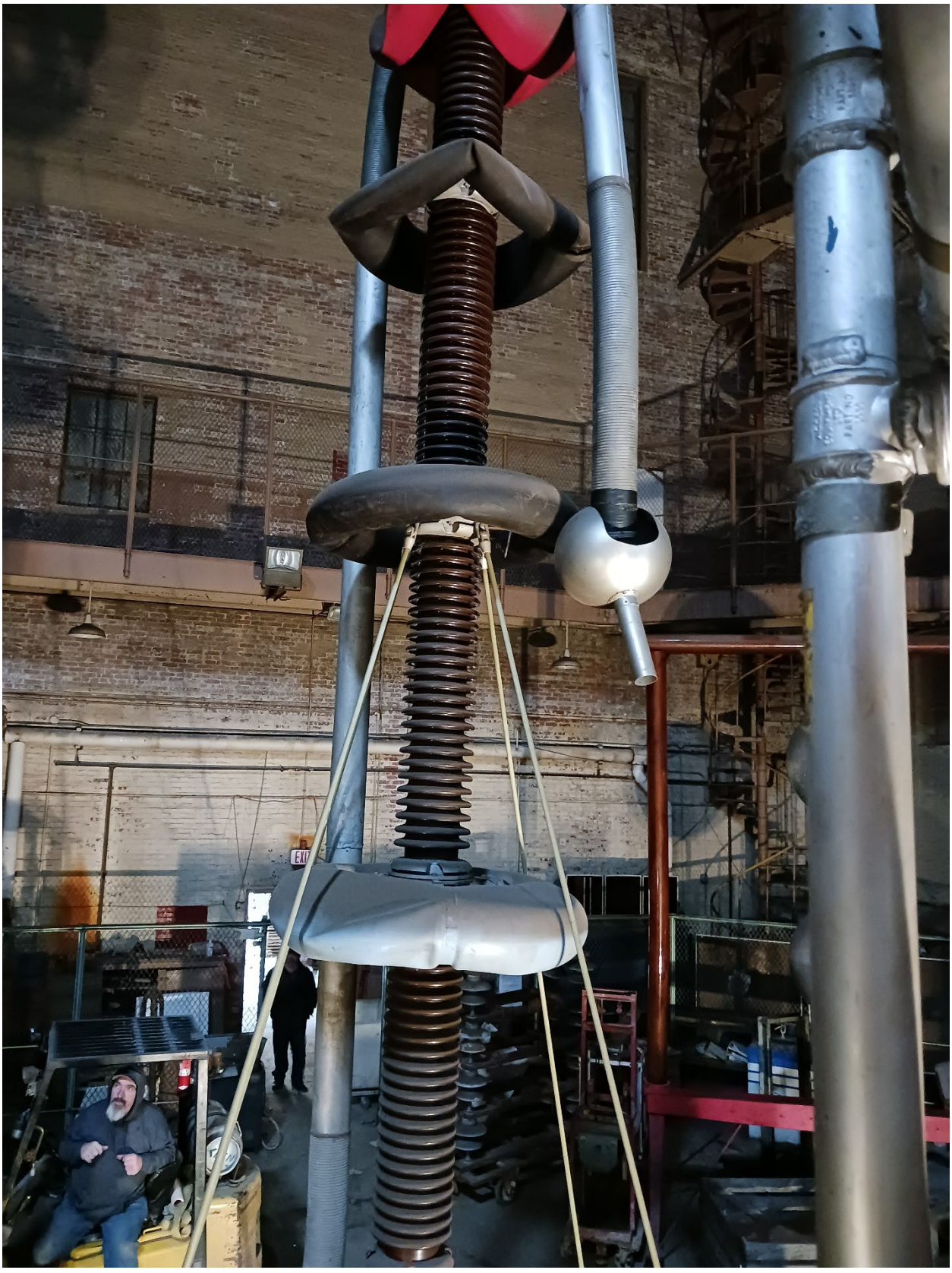
ISO 14001



Yale

Yale
EXIT





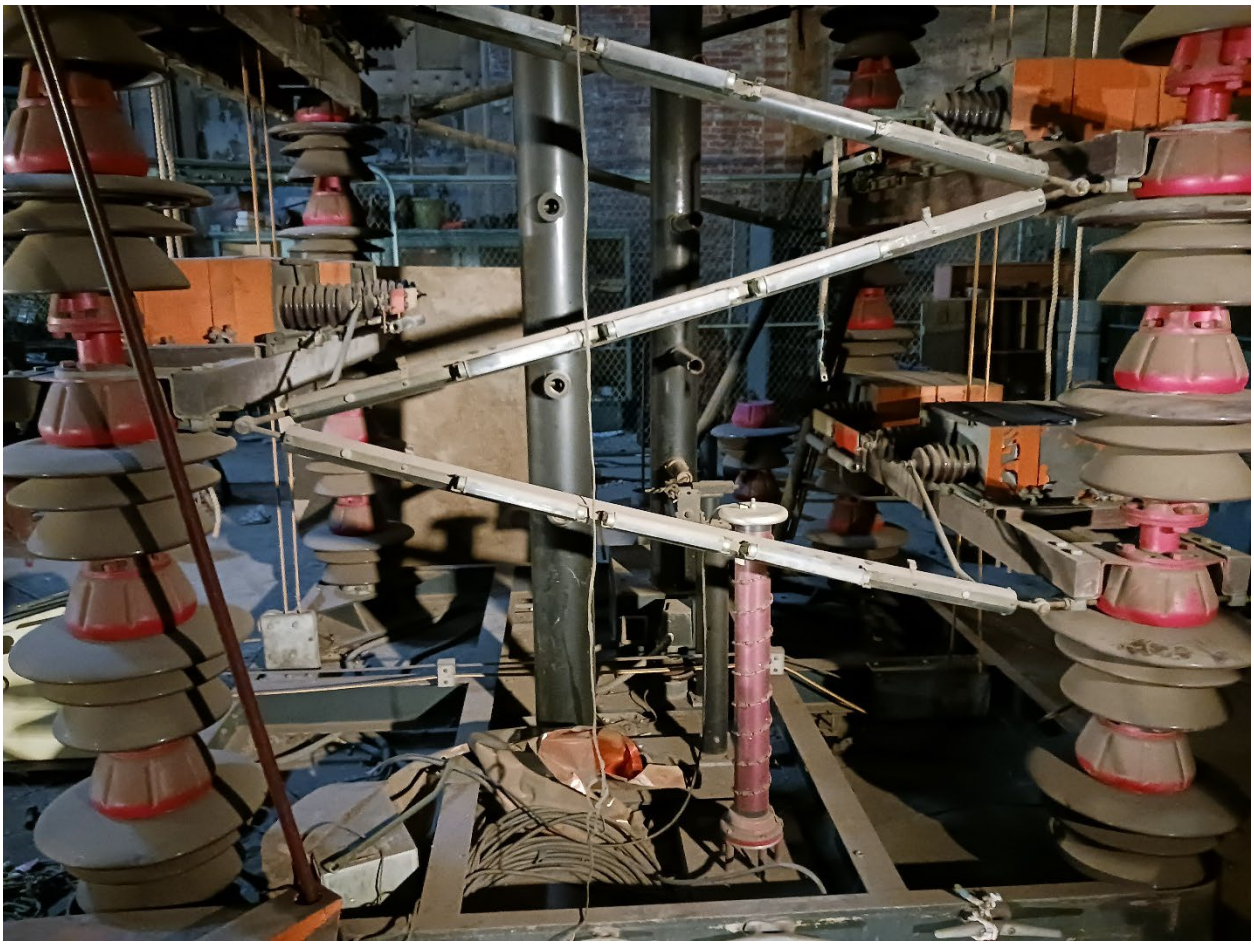
GENERAL ELECTRIC
TYPE CW COUPLING CAPACITOR UNIT
CAT. 12B58 G2
MAX WORKING VOLTAGE
CAUTION! BEFORE INSTALLING OR OPERATING READ INST
SCHENECTADY N.Y.
MADE IN U.S.A.

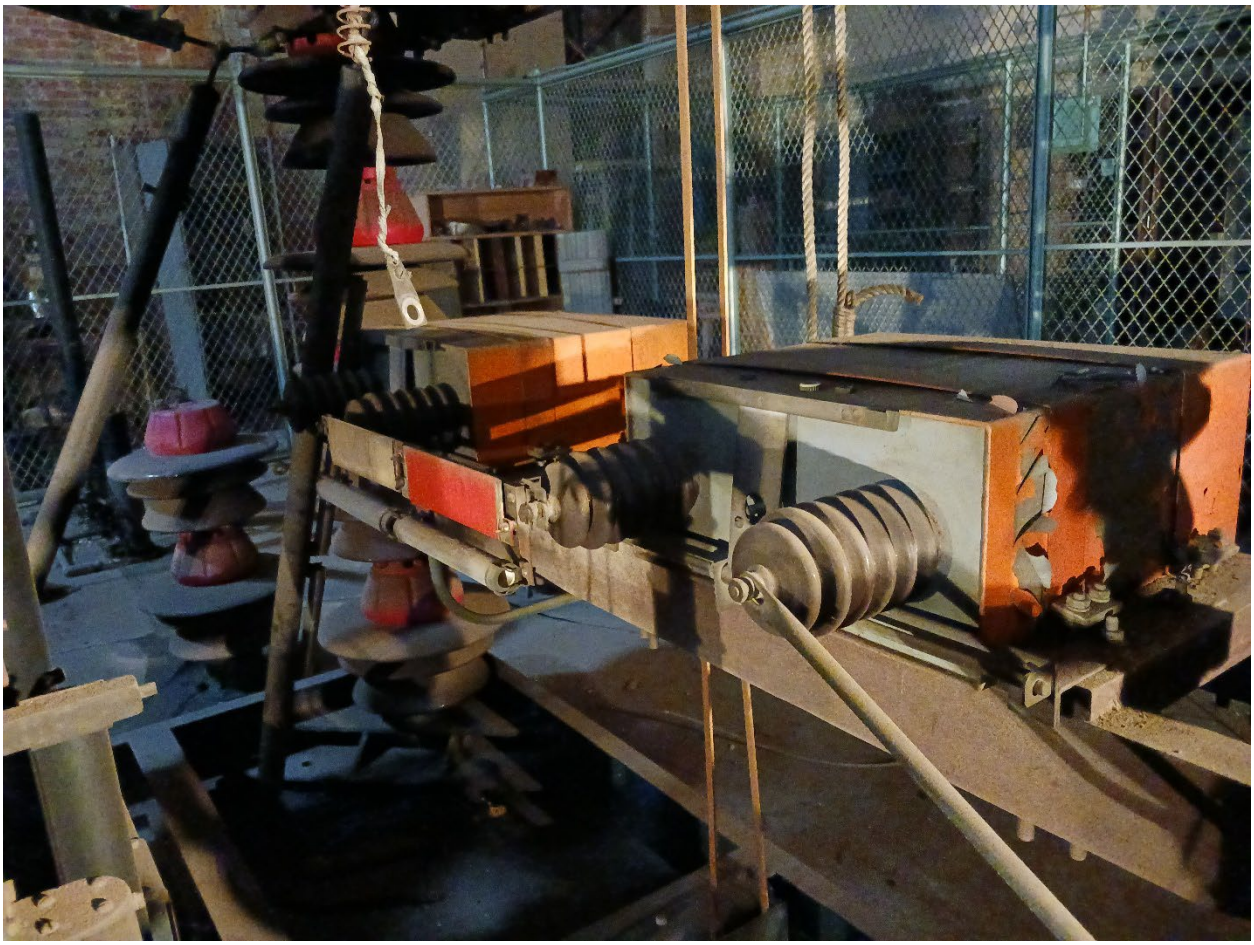
GENERAL ELECTRIC
CAT. 12B58 G2
MAX WORKING VOLTAGE
CAUTION!
SCHENECTADY N. Y.

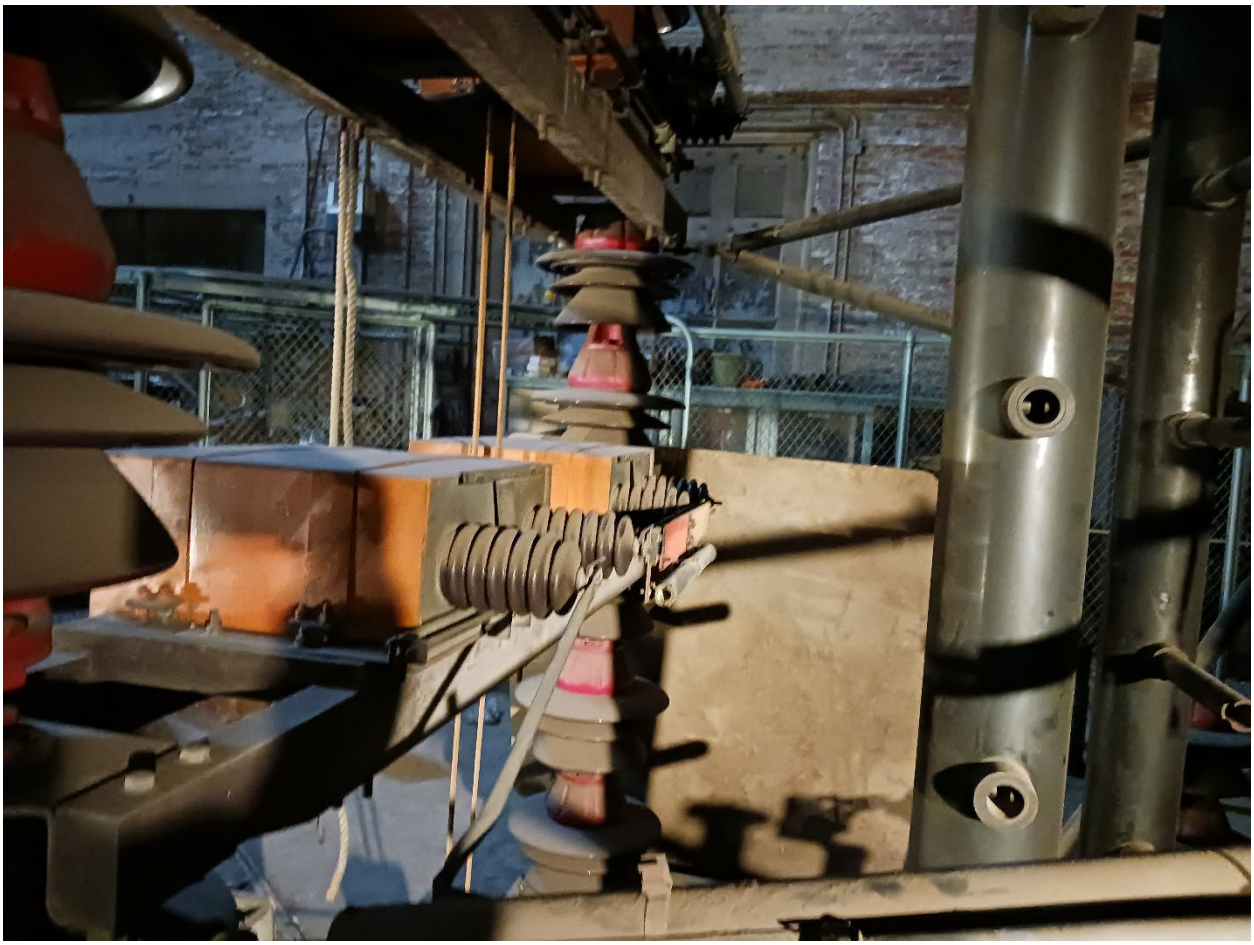
GENERAL
MAX. WORKING VOLTAGE
CAUTION!
SCHENECTADY N.Y.

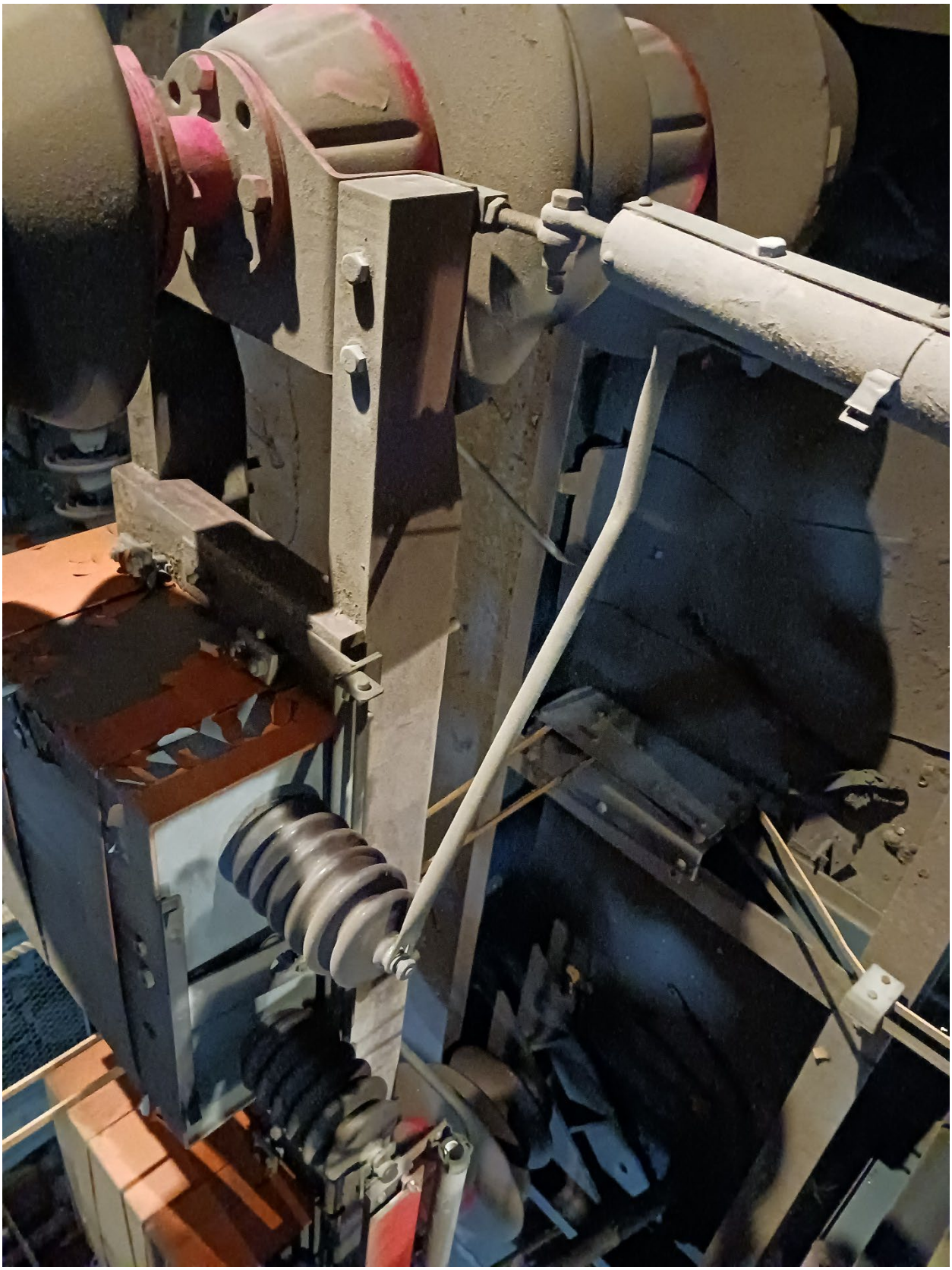
GENERAL ELECTRIC
COUPLING CAPACITOR UNIT
MODEL 4CW 3584 SERIAL 680528
TYPE CW 35B MAX OPER VOLTS 84 KV
CAP (TERM 1 TO 2) 5083 PF
CAP (TERM 2 TO 3) 80000 PF
CIR VOLTS 138 KV BIL 650 KV
CAUTION: BEFORE INSTALLING OR OPERATING READ INSTRUCTION LBI 6179
MOUNTAIN VIEW ROAD
LYNCHBURG VA
MADE IN U.S.A.

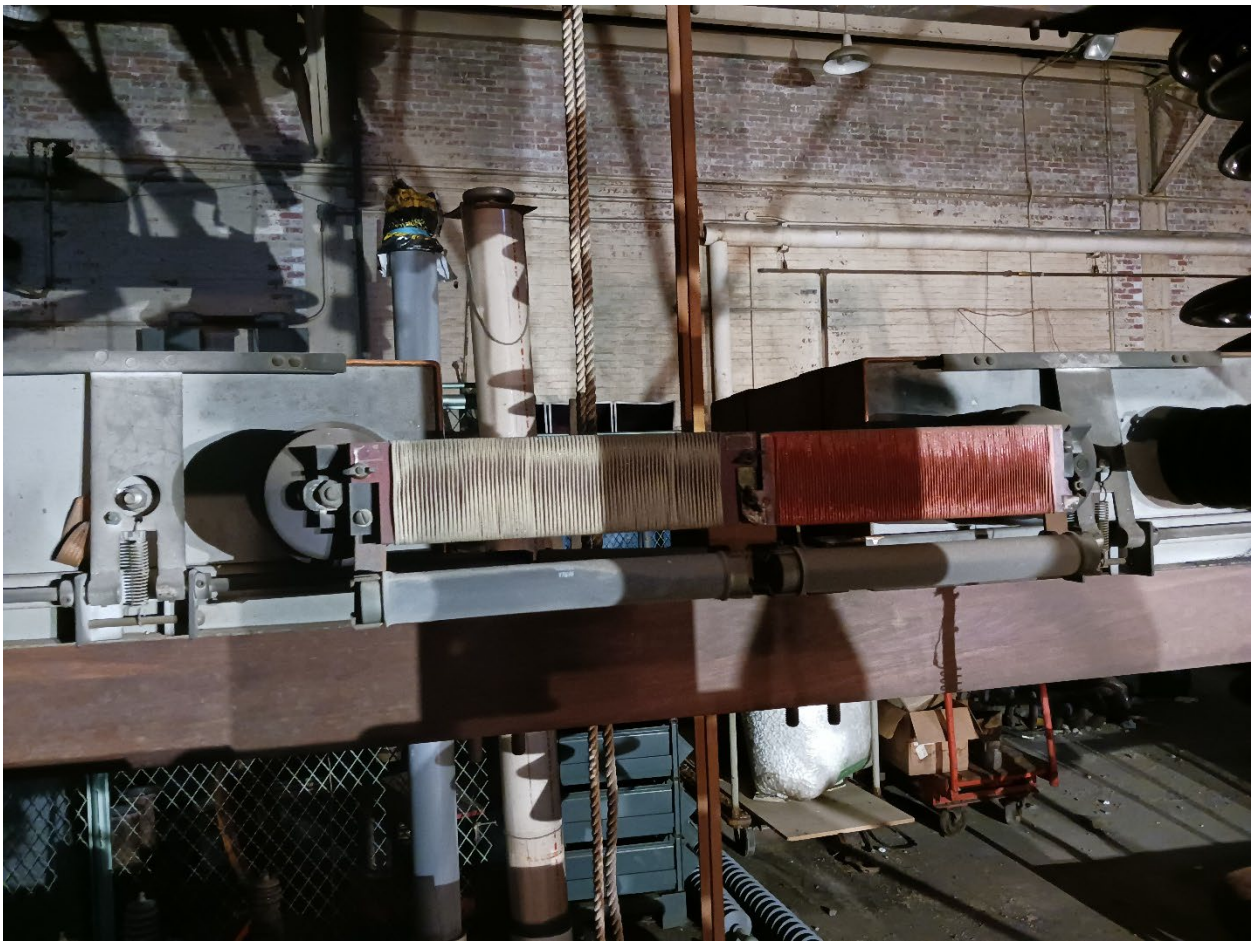
GENERAL ELECTRIC
SERIAL NO.
680528
MOUNTAIN VIEW ROAD
LYNCHBURG, VA

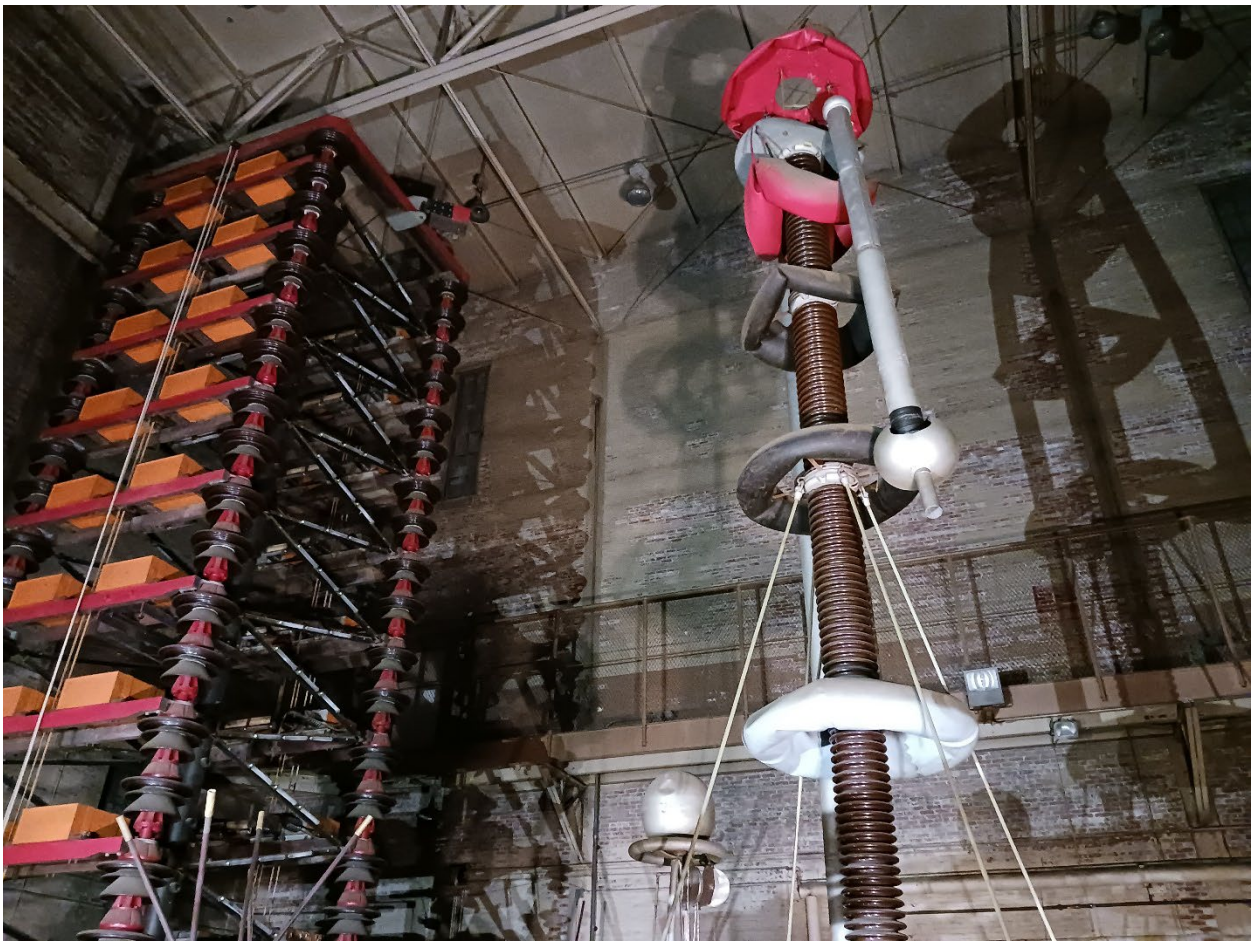


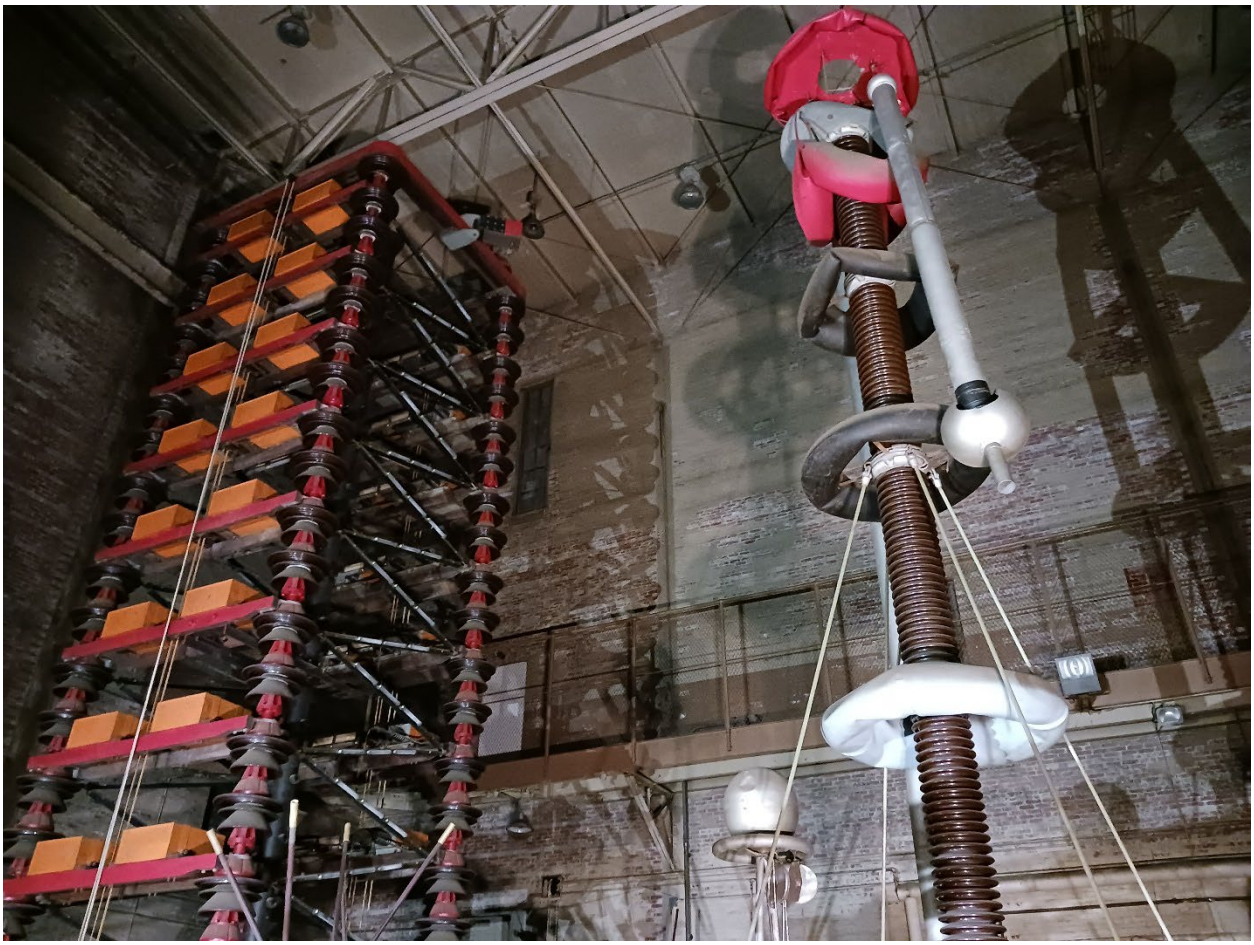


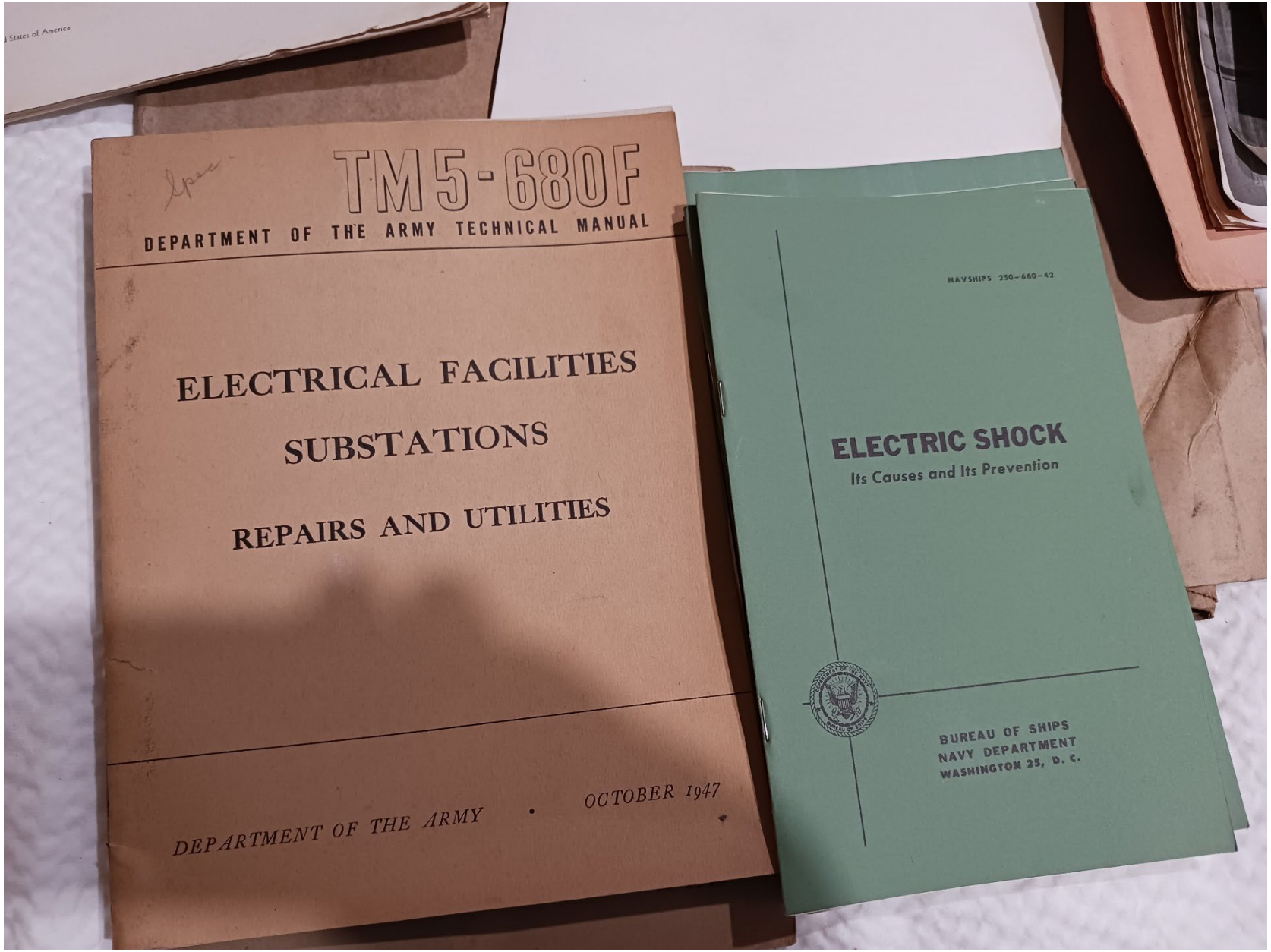


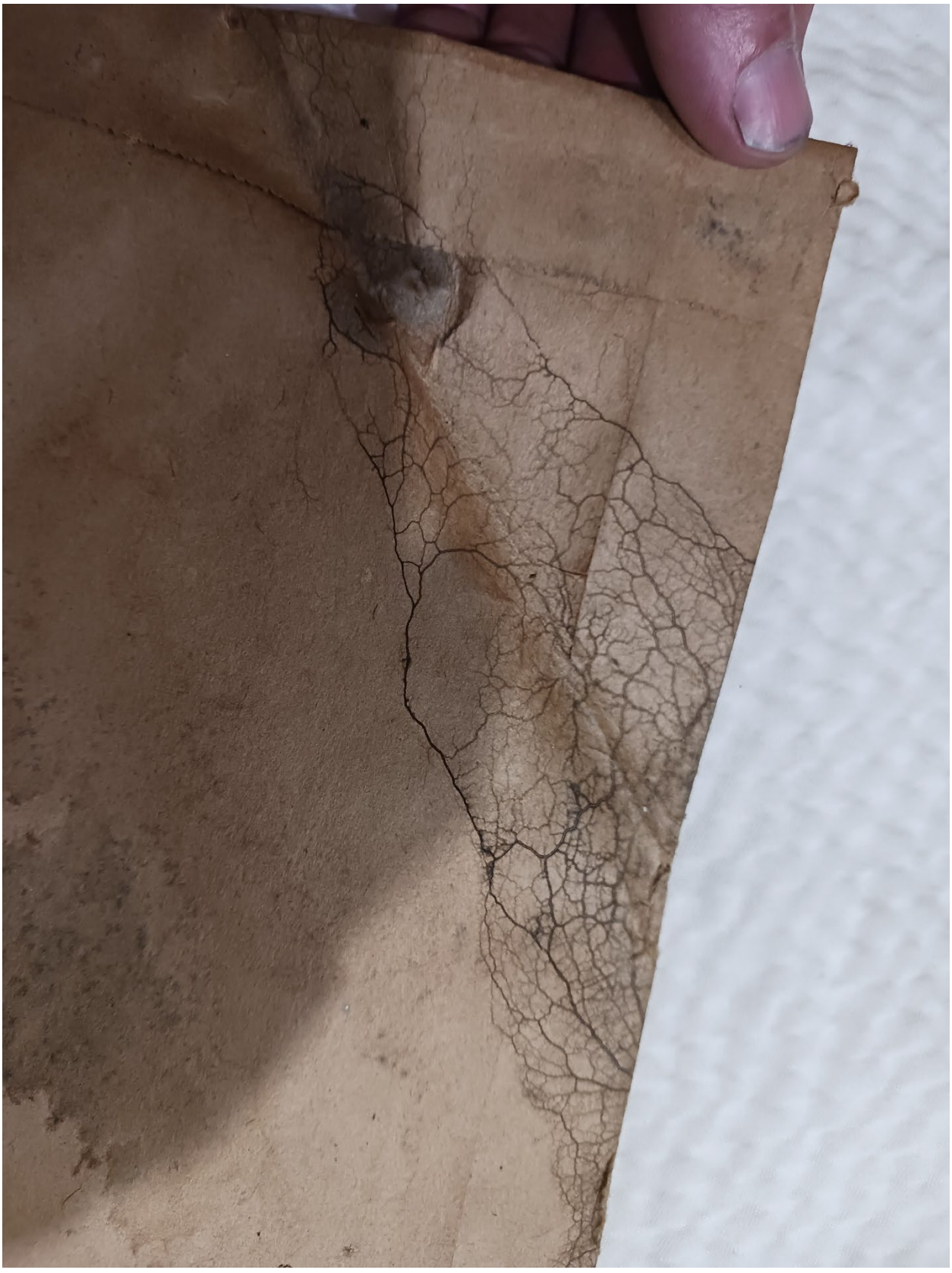




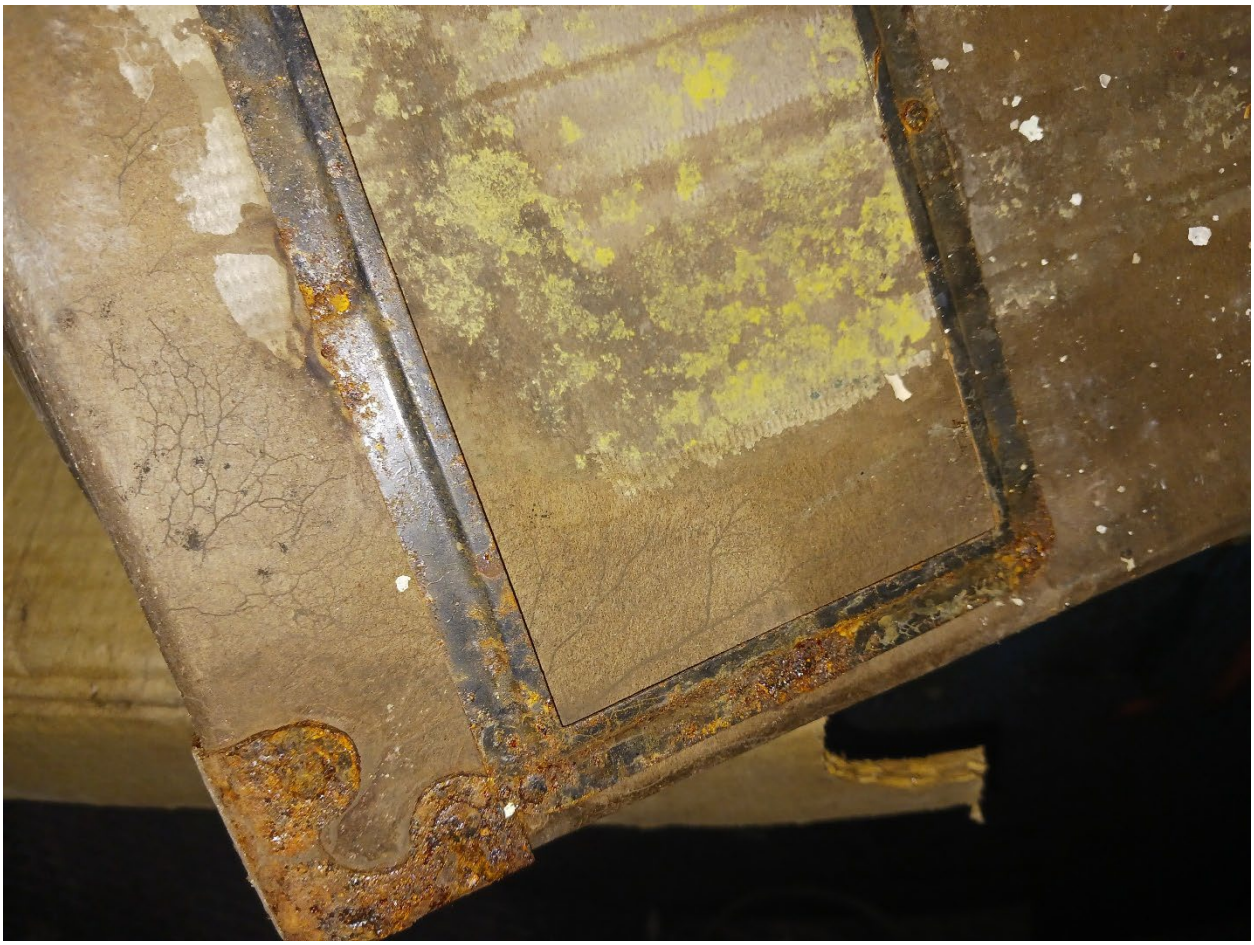




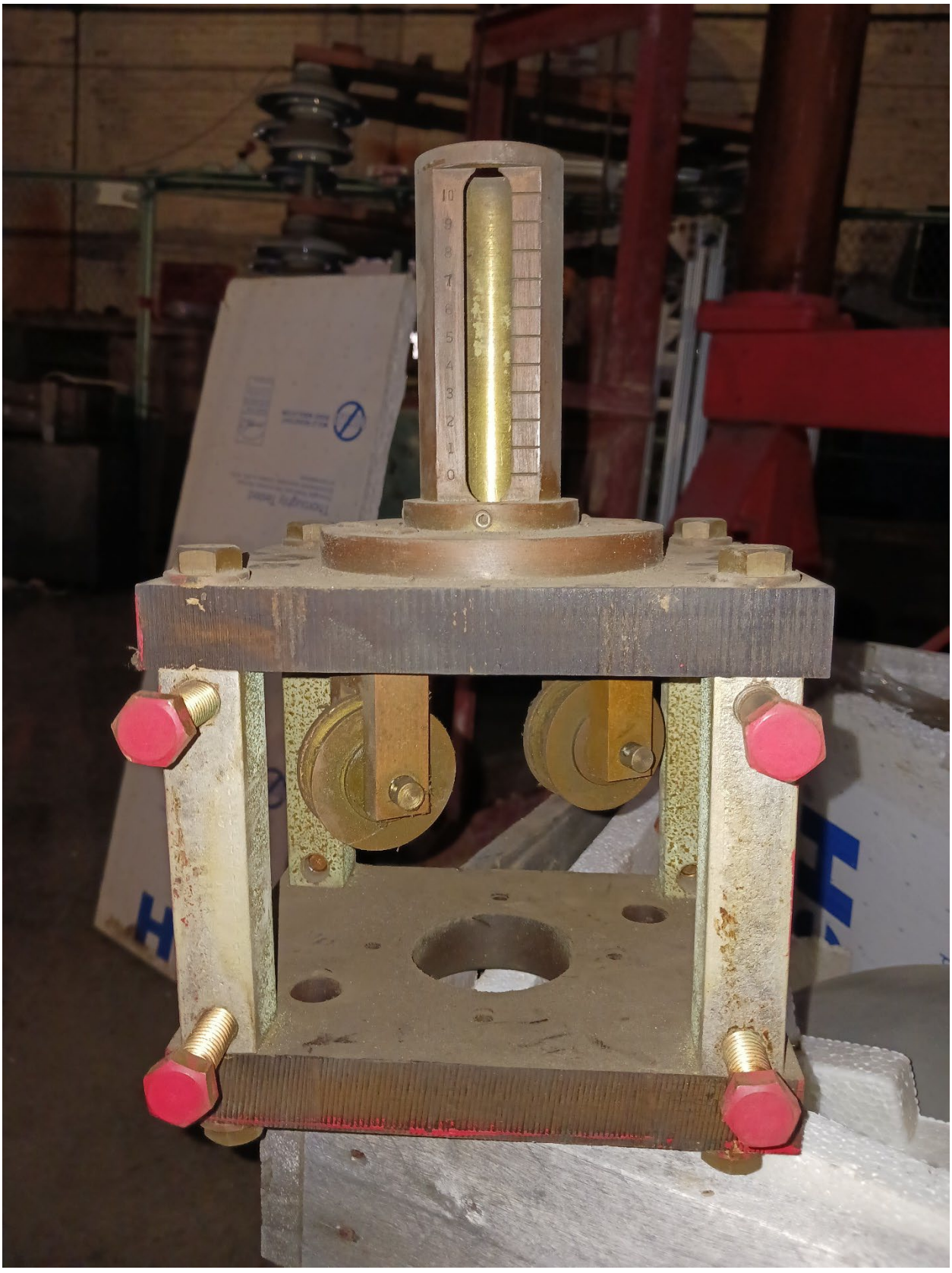

TM 5-680F
DEPARTMENT OF THE ARMY TECHNICAL MANUAL
ELECTRICAL FACILITIES
SUBSTATIONS
REPAIRS AND UTILITIES
DEPARTMENT OF THE ARMY
OCTOBER 1947
NAVSHIPS 250-660-42
ELECTRIC SHOCK
Its Causes and Its Prevention
BUREAU OF SHIPS
NAVY DEPARTMENT
WASHINGTON 25, D. C.

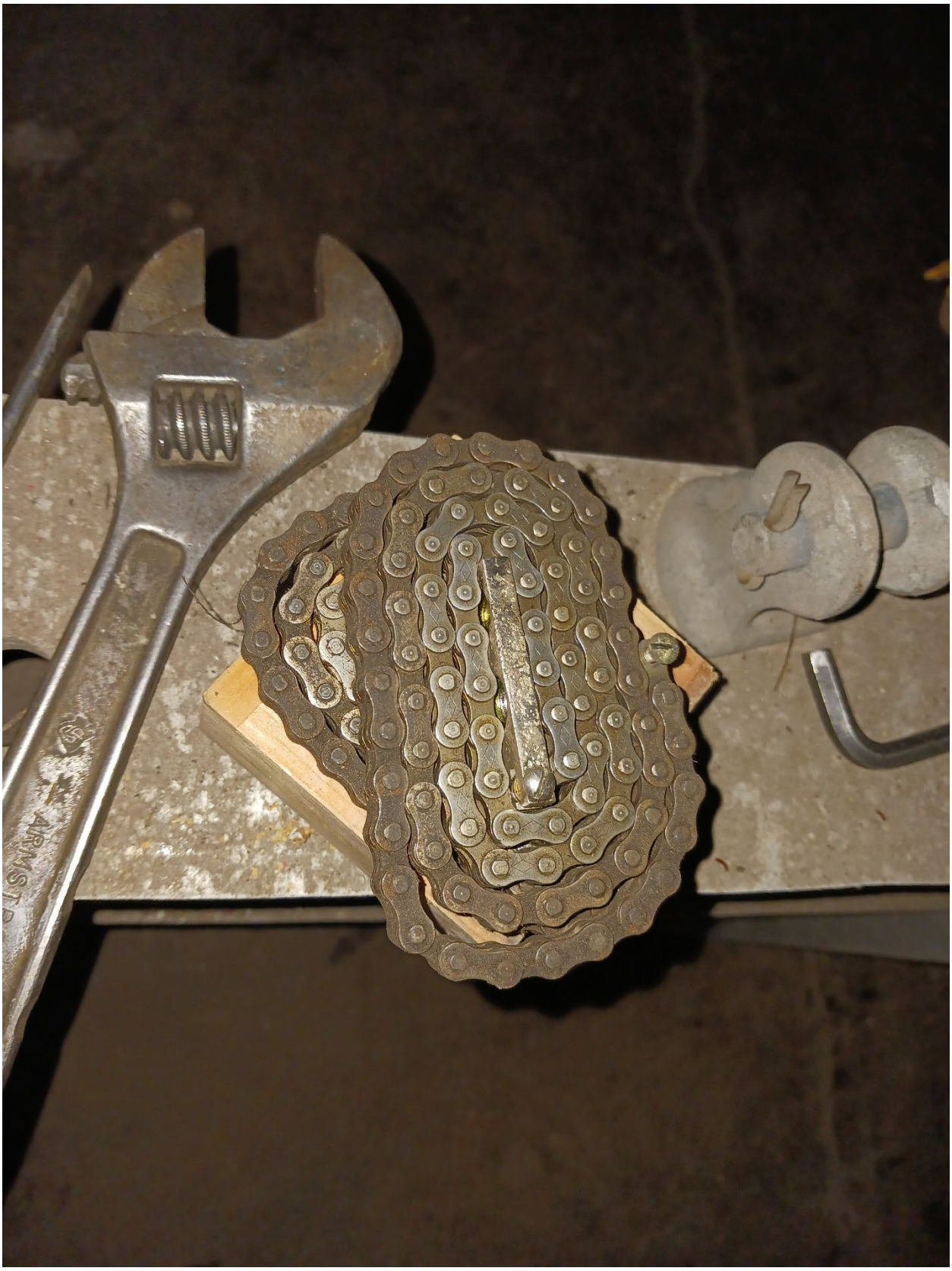


FROM
(Applicatio
START A
NEW YORK



22
20
18
16
14





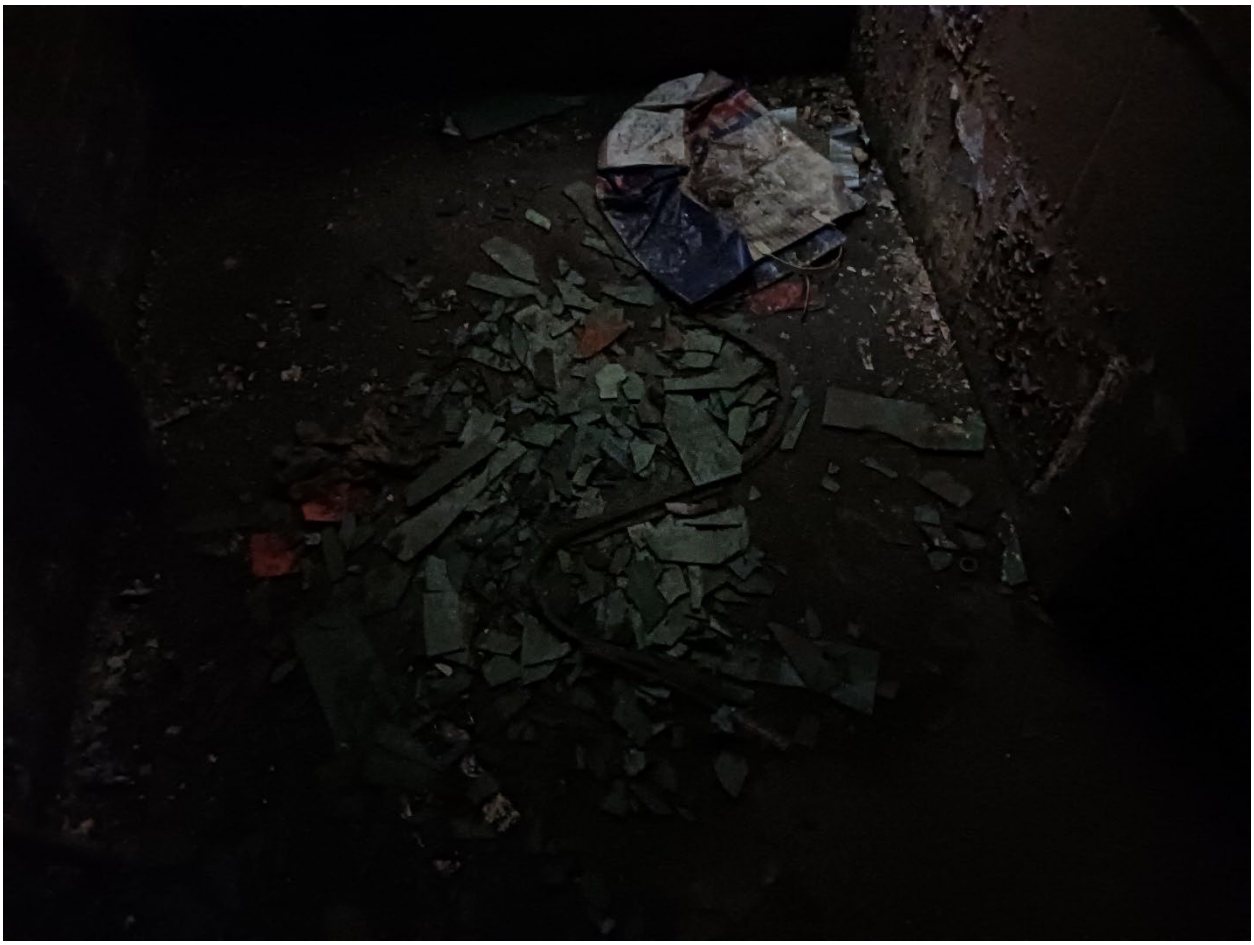
ON
CAT. TH3365 MODEL 2
400 AMP. 3 POLE 600V. AC.
GENERAL
ELECTRIC
SEE NOTE INSIDE COVER
OFF
SERVICE ENTRANCE FOR PITTSFIELD
OUTDOOR AREA

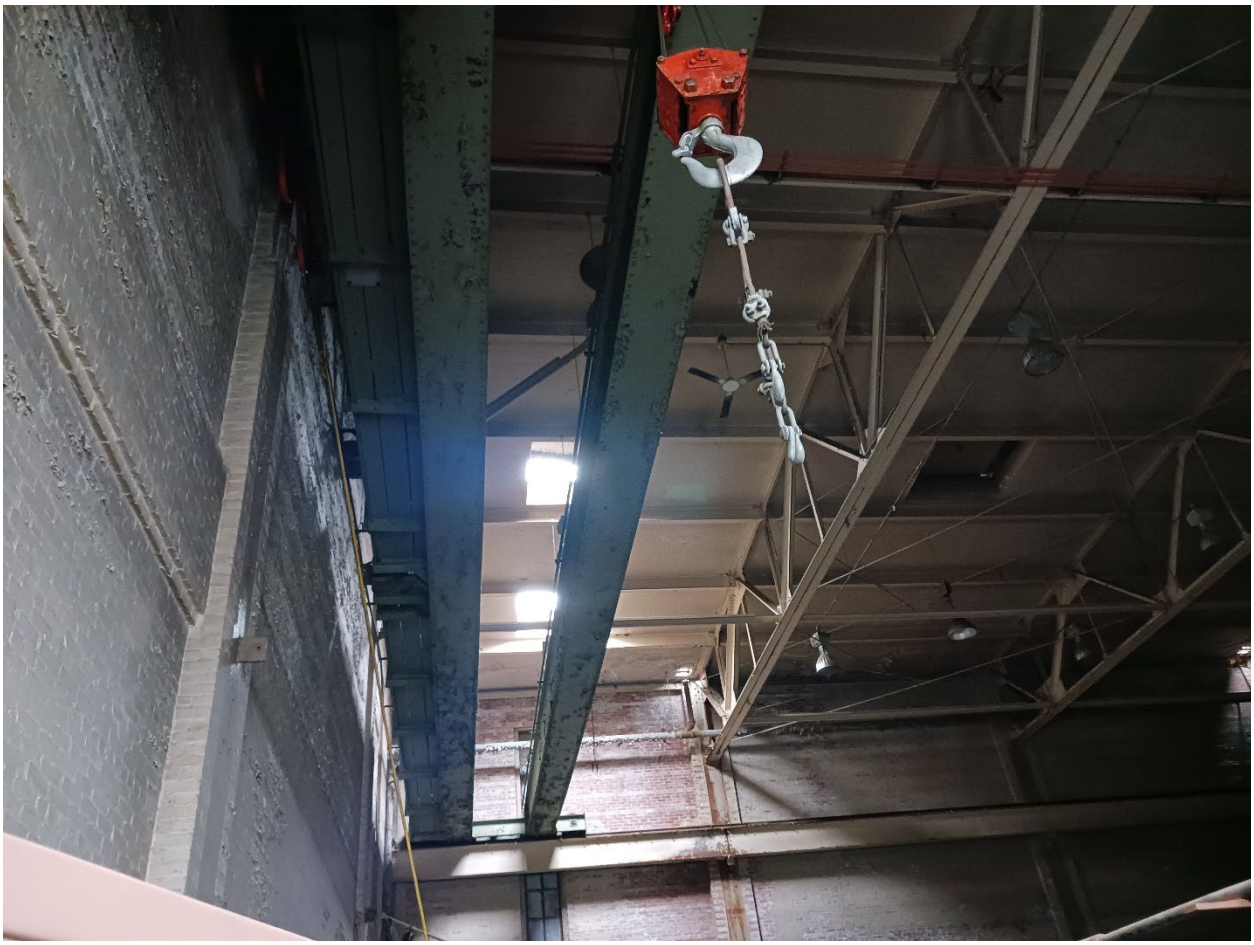
ON
CAT. TH3345 MODEL 2
400 AMP. 3 POLE 600V A.C.
GENERAL
ELECTRIC
SEE NOTE INSIDE COVER
OFF

ISTA
TV680ZC 15 X 10 X 8 3/4
Corrugated
Recycles

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
VOL. XLIII
1924
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
Volume 62
1943
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
VOL. XLV
1926
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
Volume 60
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
Volume 64
1945
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
Volume 61
1942
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
Volume 54

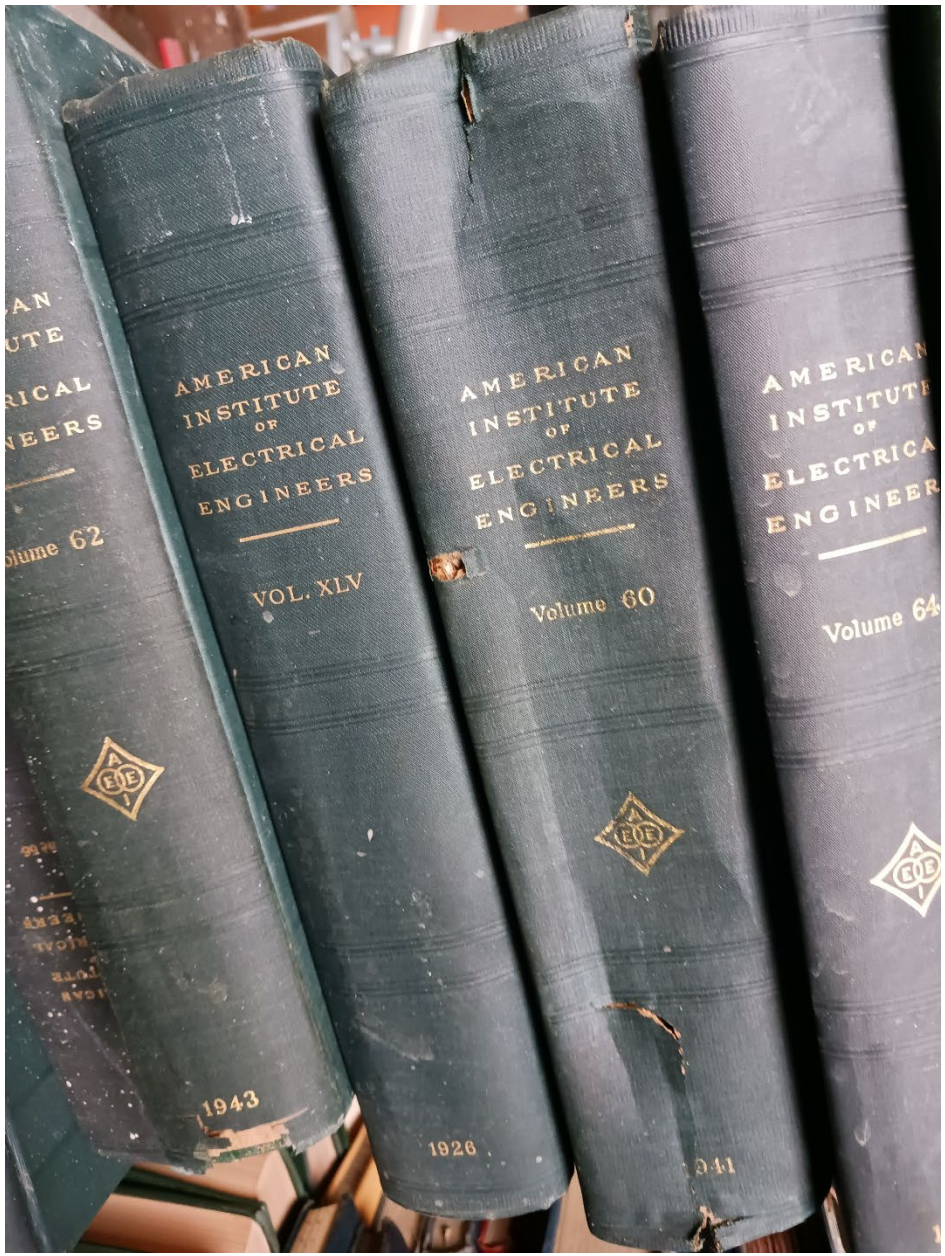
PROPERTY OF MSD/LTOB DEPT.
PROPERTY OF MSD/LTOB DEPT.
PROPERTY OF MSD/LTOB DEPT.
JOURNAL
JOURNAL
JOURNAL





Mechanical
Engineer's
Reference
Tables

GENERAL ELECTRIC
General Engineering
and
Consulting Laboratory
SCHENECTADY, NEW YORK


AMERICAN
INSTITUTE
OF
ELECTRICAL
ENGINEERS
VOL. XLV
1943
AMERICAN
INSTITUTE
OF
ELECTRICAL
ENGINEERS
Volume 60
1926
AMERICAN
INSTITUTE
OF
ELECTRICAL
ENGINEERS
Volume 64

FORGING
Kaiser Aluminum
FORGING
Kaiser Aluminum
ENGINEERING ECONOMICS FOR
PROFESSIONAL ENGINEERS' EXAMINA
FORGING INDUSTRY HANDBOOK
FORGING INDUSTRY HANDBO
STRUCTURAL ENGINEERING
KURTZ
EXAMINATIONS

Aesar

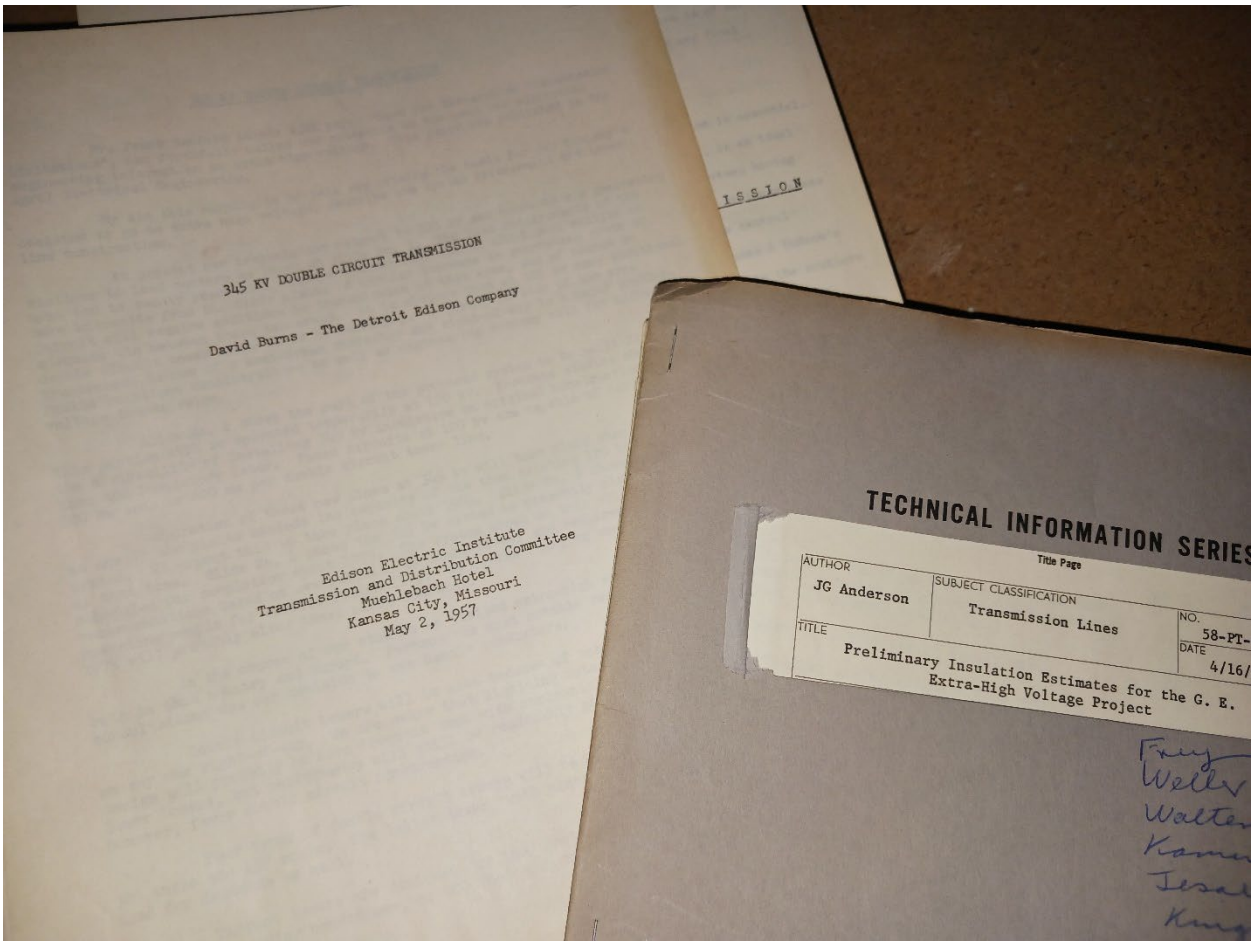
Alfa Aesar
Johnson Matthey Company

CALCULATION OF TRANSMISSION LINE
LIGHTNING VOLTAGES BY FIELD CONCEPTS

R. Lundholm
Associate Member AIEE
Professor Emeritus of Elec
Chalmers Insti

GENERAL ELECTRIC
GENERAL ELECTRIC

GENERAL ELECTRIC
Proposal for
CO-OPERATIVE 500-KV EHV DESIGN STUDIES
ELECTRIC UTILITY ENGINEERING
GENERAL ELECTRIC
CO-OPERATIVE 345-KV DESIGN STU
ELECTRIC UTILITY ENGINE
ELECTRIC UTILITY ENGINEERING
TECHNICAL INFORMATION SERIES
FOR USE OF G-E EMPLOYEES ONLY
GENERAL ELECTRIC
TRANSFORMER AND ALLIED PRODUCTS DIVISION



345 KV DOUBLE CIRCUIT TRANSMISSION

David Burns - The Detroit Edison Company

Edison Electric Institute
Transmission and Distribution Committee
Muehlebach Hotel
Kansas City, Missouri
May 2, 1957

I S S I O N

TECHNICAL INFORMATION SERIES

Title Page

AUTHOR: JG Anderson

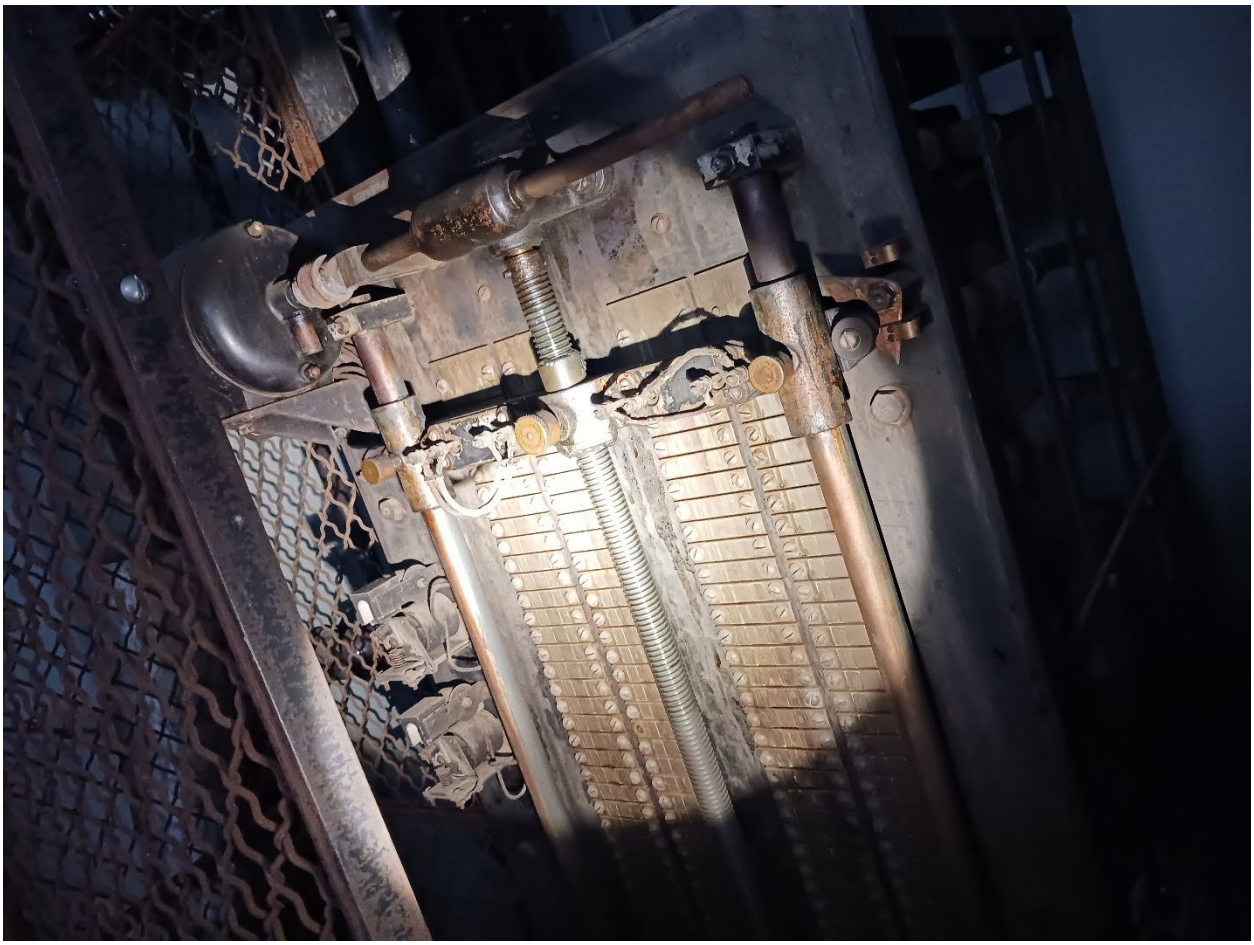
SUBJECT CLASSIFICATION: Transmission Lines

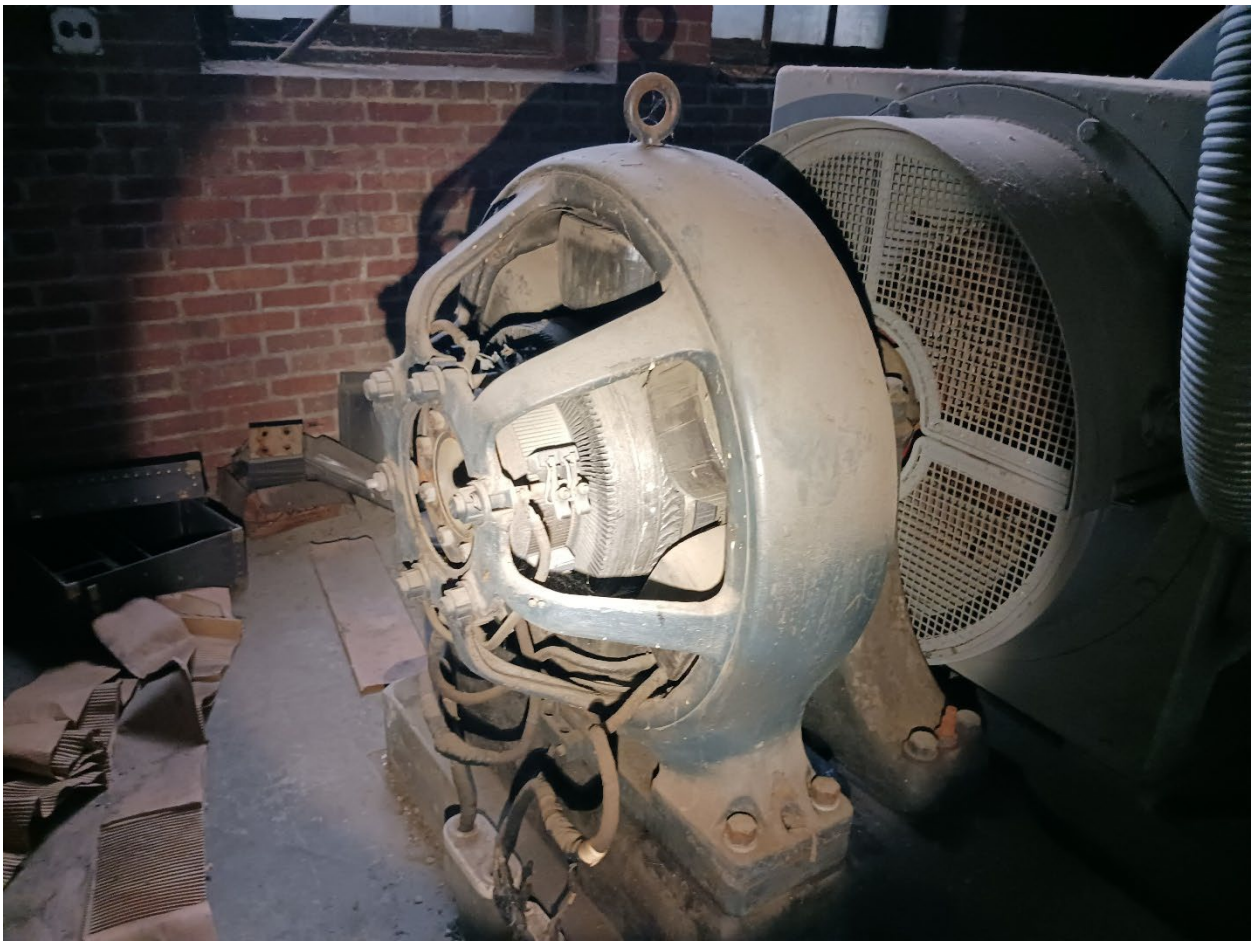
NO. 58-PT-

DATE 4/16/

TITLE: Preliminary Insulation Estimates for the G. E. Extra-High Voltage Project

Fry
Welle
Walter
Kram
Isra
Kuo





5
4
3
A
B
A
B
A
D
A

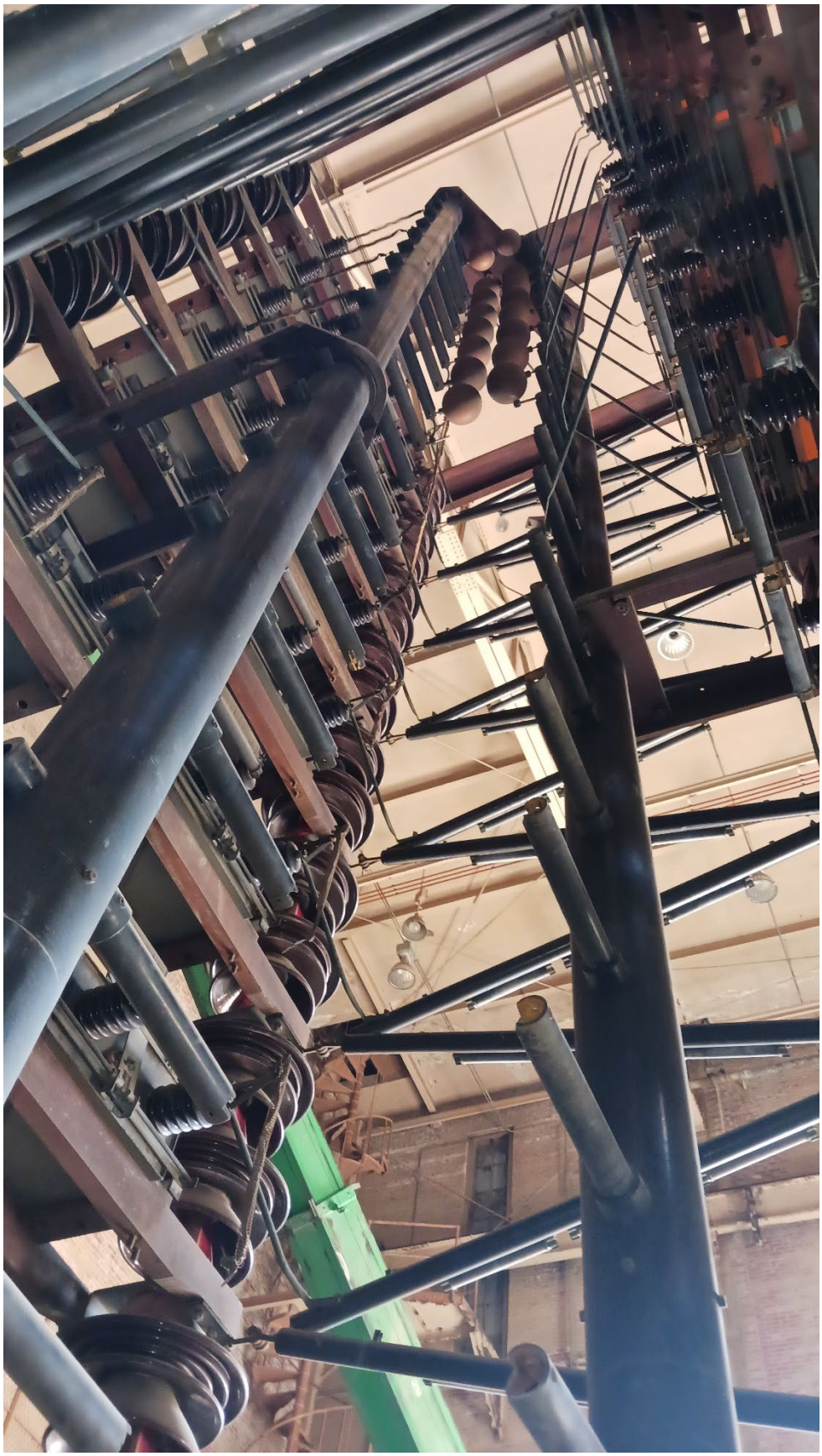
B A B A B A
5
4
3

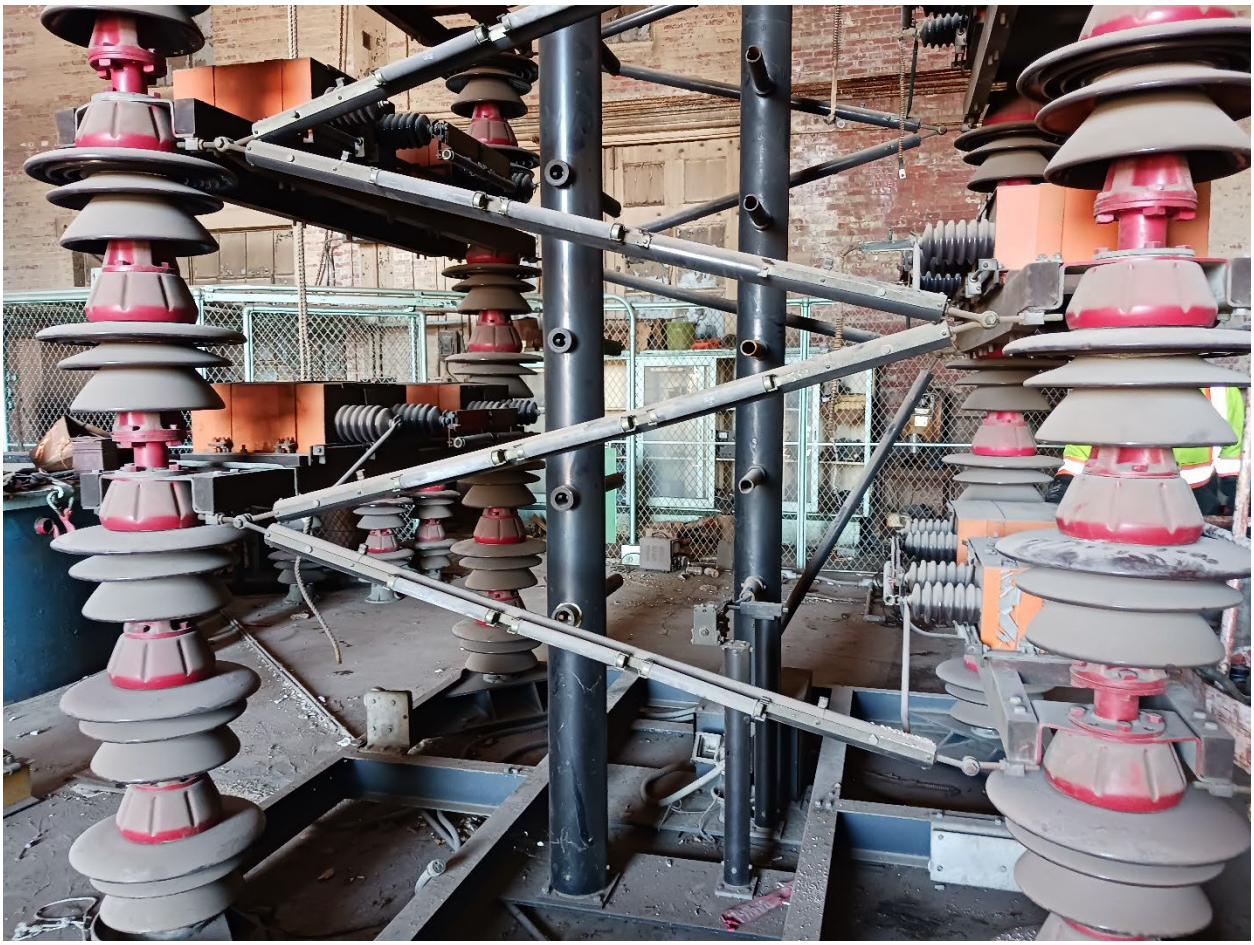
A
A
B
A
B
B
9
7

12
11
10
9
8
A
B

FIRE
EXTINGUISHER
A
B
B
8
7
6

CLOSE





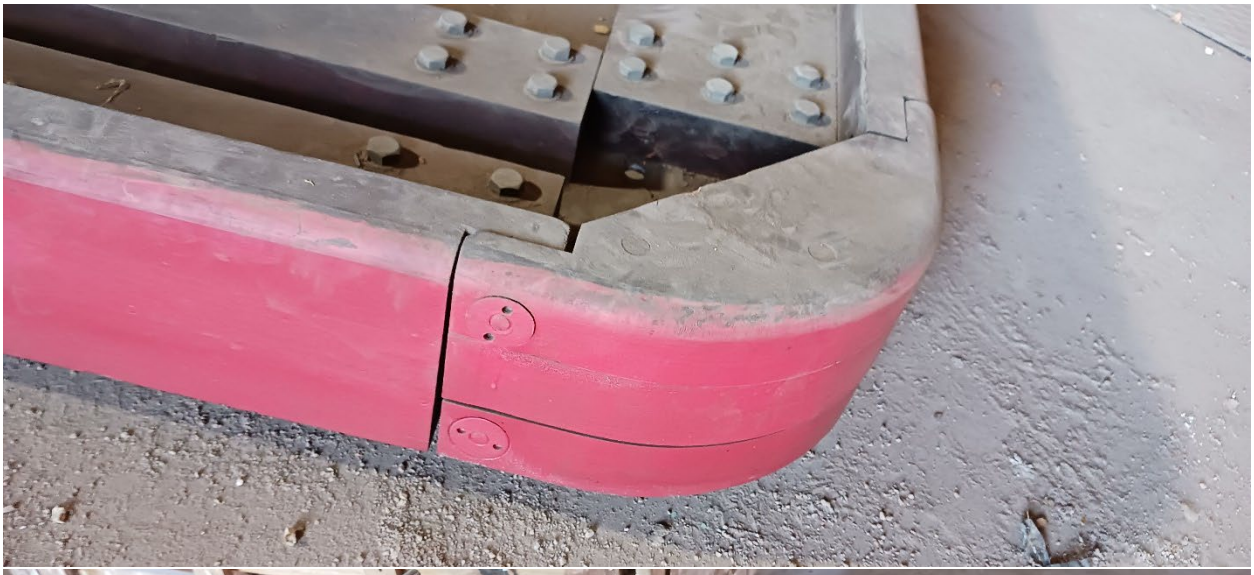
DANGER

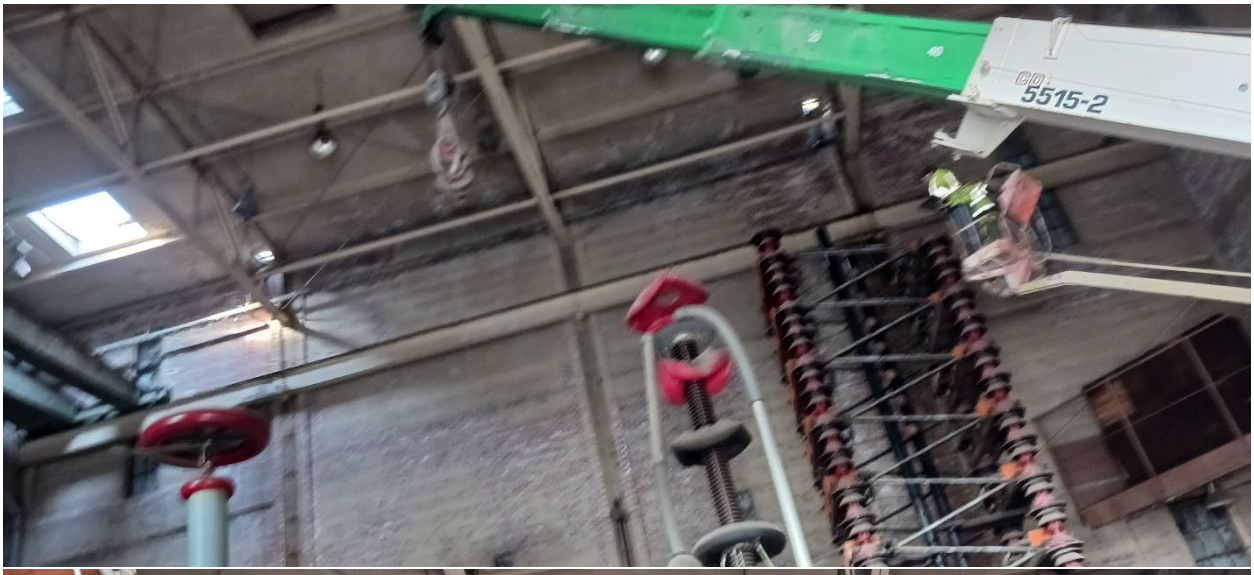
.22

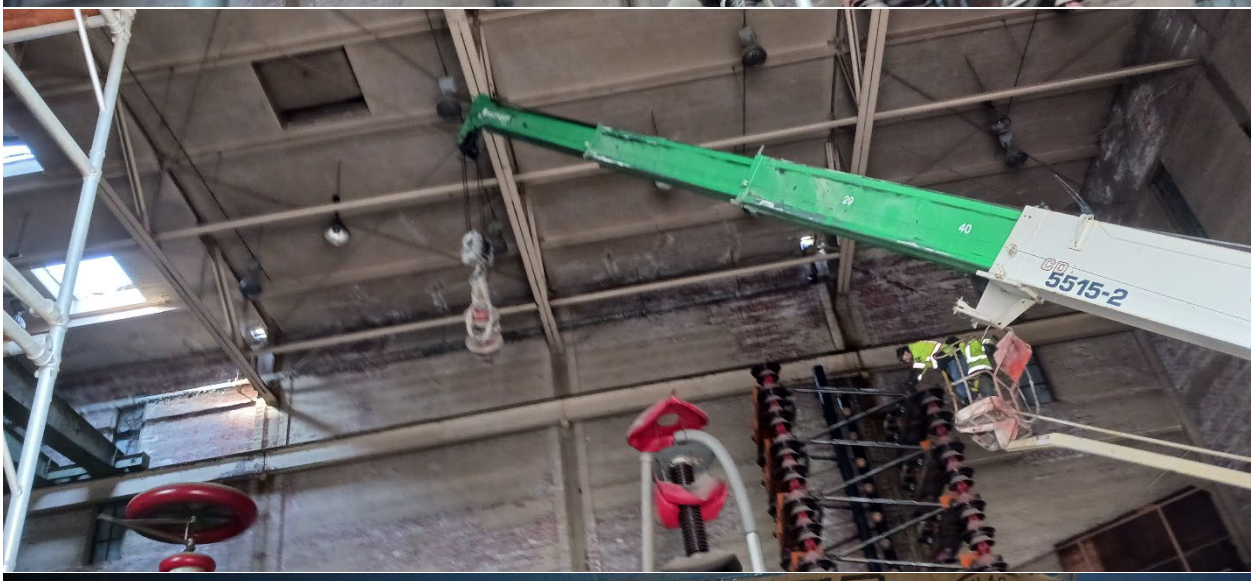
JLG 30
601176 157

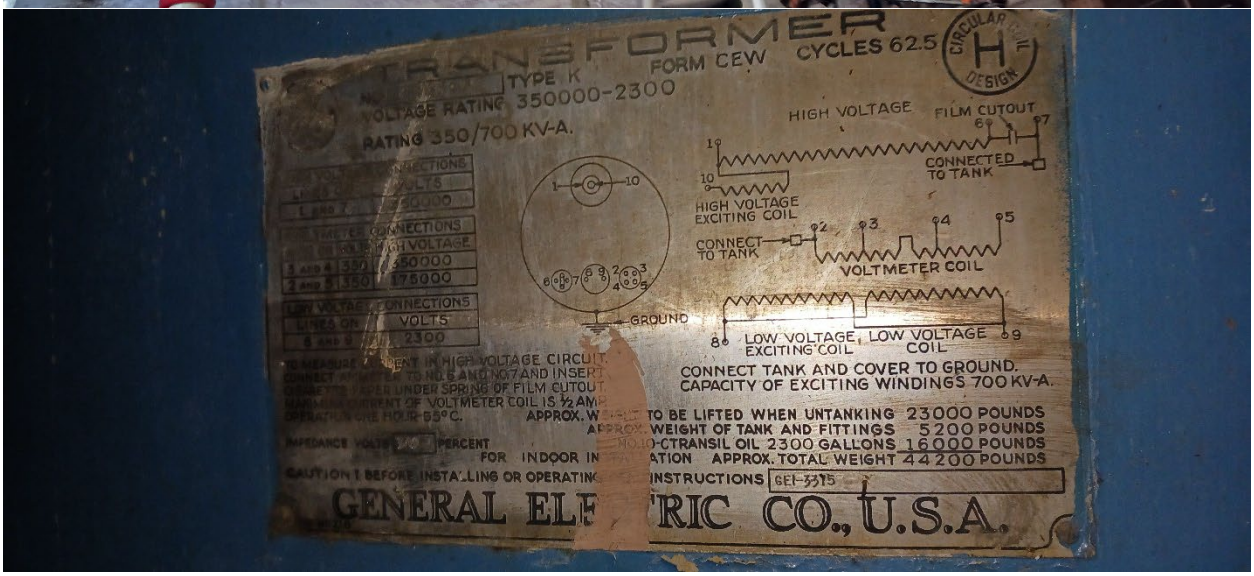
5515-2
601176 157
601176 157

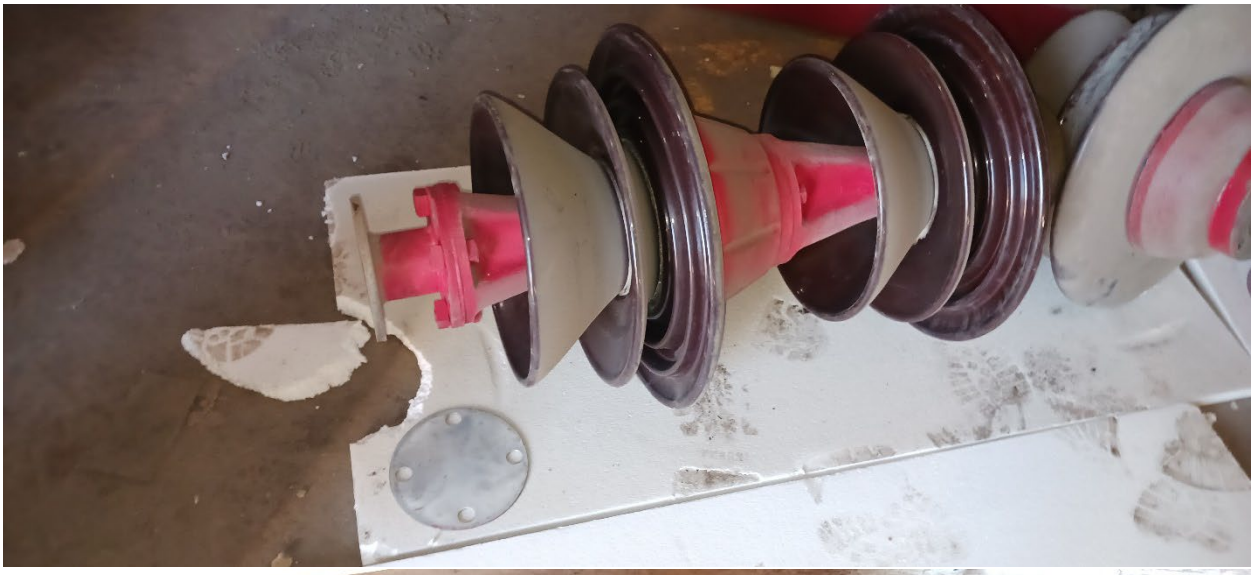
5515-2

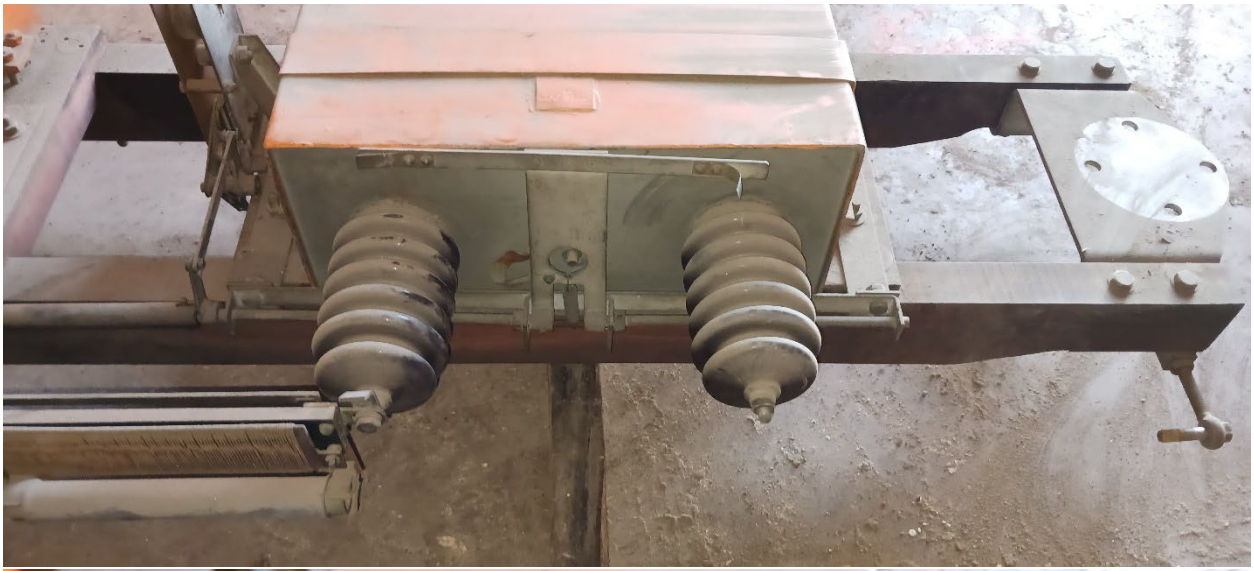



CD
5515-2

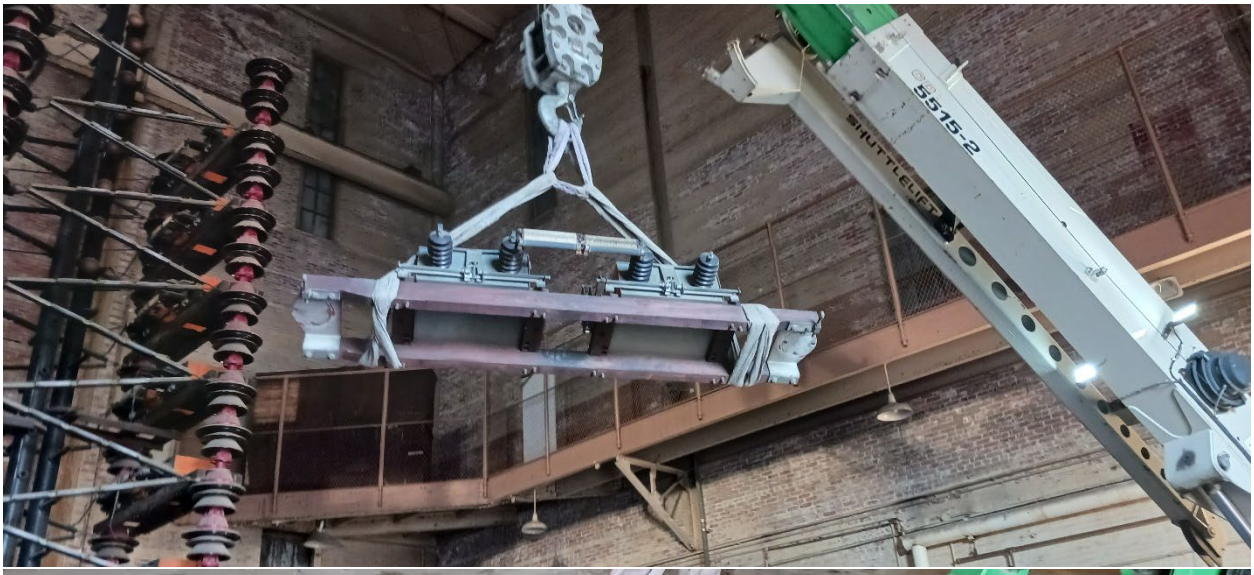

CD
5515-2


TRANSFORMER
TYPE K
FORM CEW
CYCLES 62.5
CIRCULAR MIL DESIGN
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
HIGH VOLTAGE
FILM CUTOUT
CONNECTED TO TANK
HIGH VOLTAGE EXCITING COIL
CONNECT TO TANK
VOLTMETER COIL
GROUND
LOW VOLTAGE EXCITING COIL
LOW VOLTAGE COIL
CONNECT TANK AND COVER TO GROUND.
CAPACITY OF EXCITING WINDINGS 700 KV-A.
TO BE LIFTED WHEN UNTANKING 23000 POUNDS
WEIGHT OF TANK AND FITTINGS 5200 POUNDS
TRANSIL OIL 2300 GALLONS 16000 POUNDS
APPROX. TOTAL WEIGHT 44200 POUNDS
INSTRUCTIONS GEI-3315
GENERAL ELECTRIC CO., U.S.A.





GENERAL ELECTRIC
PYRANOL CAPACITOR
NO 0360 2 M 14 F 172
VOLTS 75000 DC
MFD .55
CONN DIA
CONTAINS 4.9 GAL NON-FLAMMABLE LIQUID
SCHENECTADY N.Y. MADE IN U.S.A.

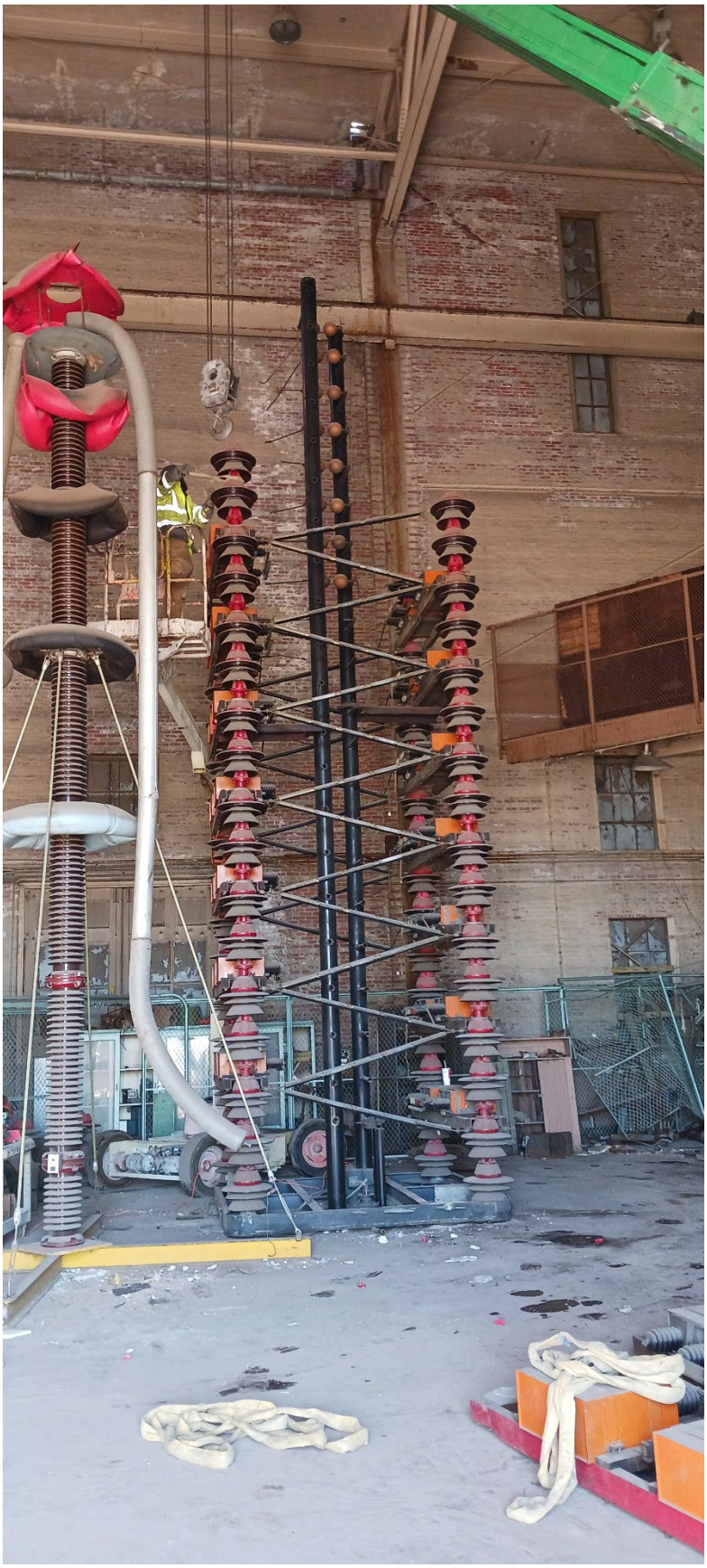

5515-2

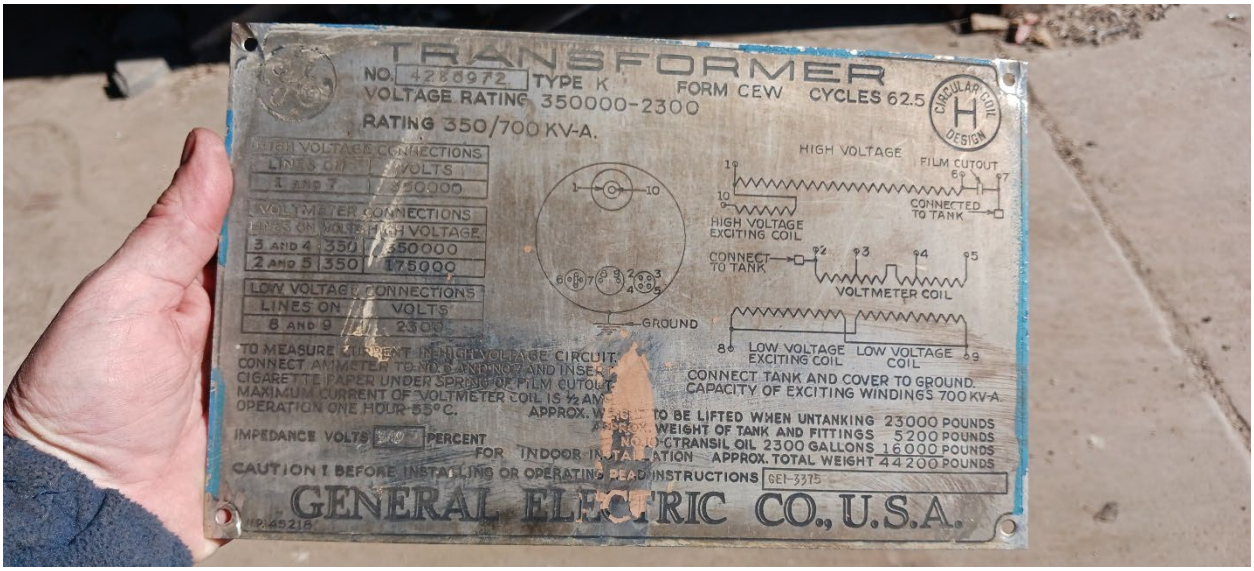
SKUNKWORTS • BREWING CONCEPTS •

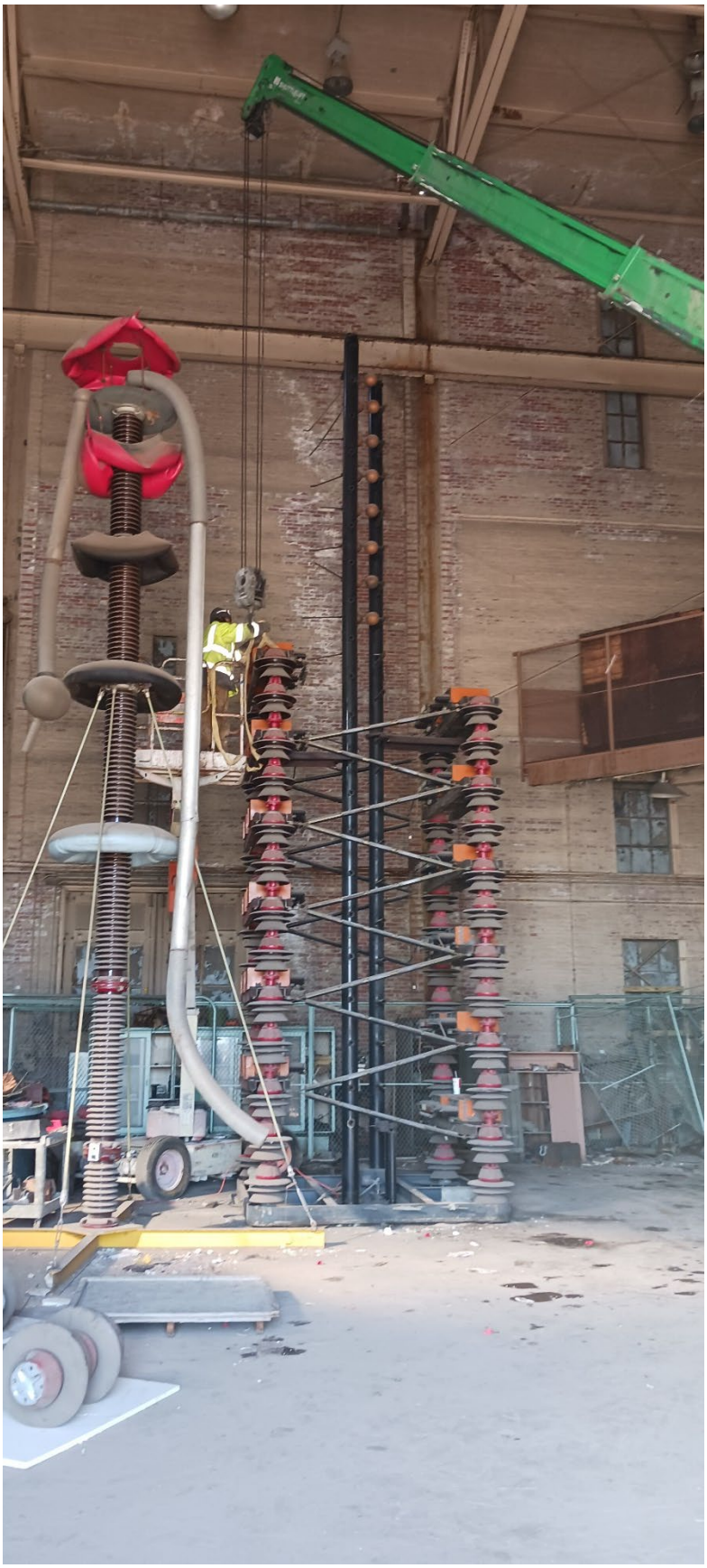
SKUNKWORTS
BREWING CONCERN

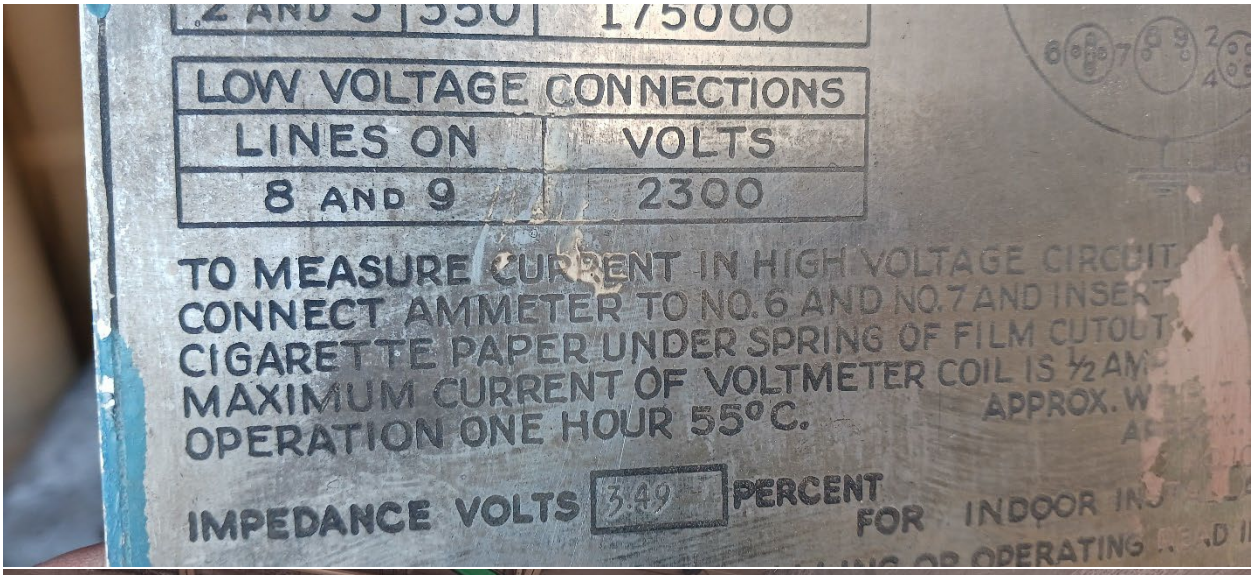
SKUNKWORKS · BREWING CONCEPTS ·

EDISON
BATTERIES

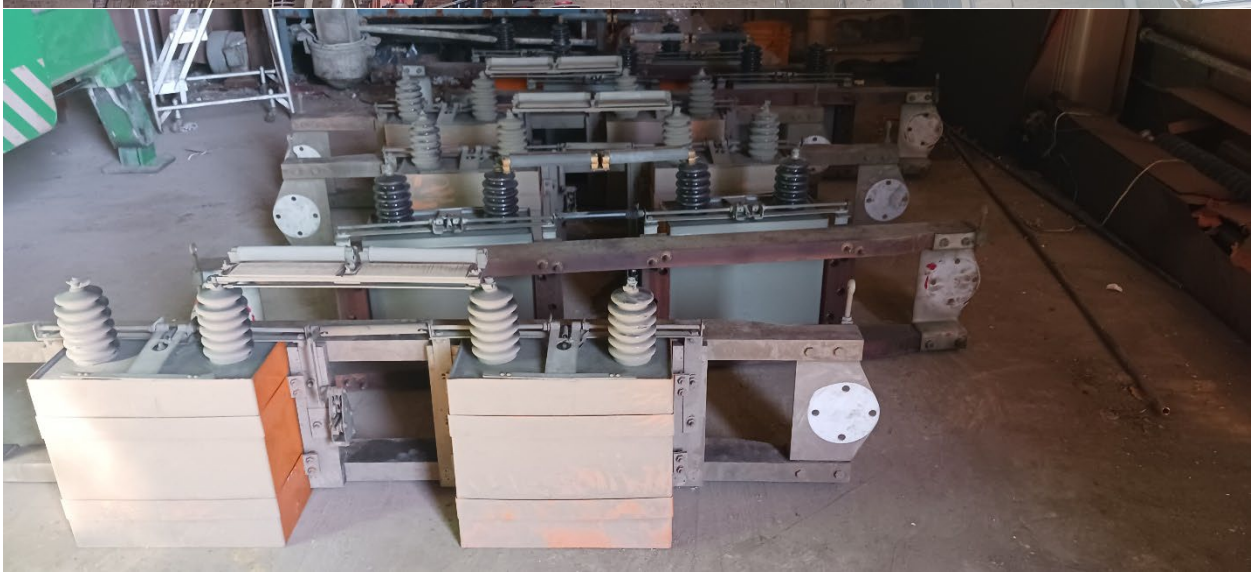


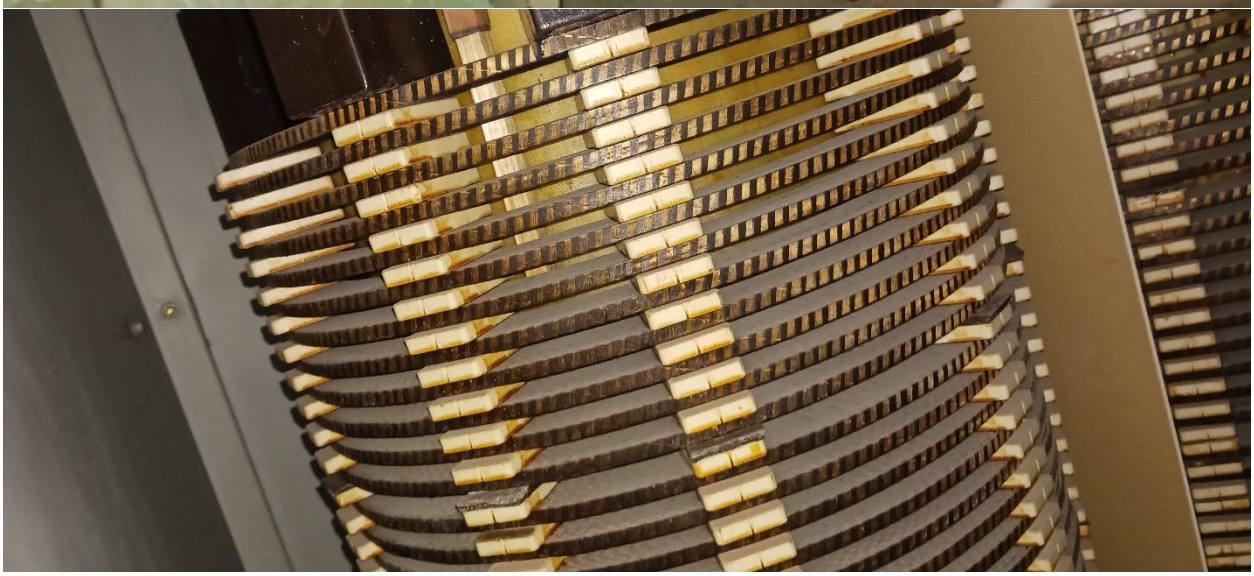

TRANSFORMER
NO. 4288972 TYPE K FORM CEW CYCLES 62.5
VOLTAGE RATING 350000-2300
RATING 350/700 KV-A.
CIRCULAR MIL DESIGN
H
HIGH VOLTAGE CONNECTIONS
LINES ON VOLTS
1 AND 7 350000
VOLTMETER CONNECTIONS
LINES ON VOLTS HIGH VOLTAGE
3 AND 4 350 350000
2 AND 5 350 175000
LOW VOLTAGE CONNECTIONS
LINES ON VOLTS
8 AND 9 2300
HIGH VOLTAGE
FILM CUTOUT
CONNECTED TO TANK
HIGH VOLTAGE EXCITING COIL
CONNECT TO TANK
VOLTMETER COIL
GROUND
LOW VOLTAGE EXCITING COIL
LOW VOLTAGE COIL
CONNECT TANK AND COVER TO GROUND.
CAPACITY OF EXCITING WINDINGS 700 KV-A.
TO MEASURE CURRENT IN HIGH VOLTAGE CIRCUIT,
CONNECT AMMETER TO NO. 3 AND NO. 7 AND INSERT
CIGARETTE PAPER UNDER SPRING OF FILM CUTOUT.
MAXIMUM CURRENT OF VOLTMETER COIL IS ½ AM
OPERATION ONE HOUR 55°C.
APPROX. WEIGHT TO BE LIFTED WHEN UNTANKING 23000 POUNDS
WEIGHT OF TANK AND FITTINGS 5200 POUNDS
TRANSIL OIL 2300 GALLONS 16000 POUNDS
APPROX. TOTAL WEIGHT 44200 POUNDS
IMPEDANCE VOLTS 3.0 PERCENT
FOR INDOOR INSTALLATION
CAUTION! BEFORE INSTALLING OR OPERATING READ INSTRUCTIONS GEI-3375
GENERAL ELECTRIC CO., U.S.A.
P.I. 45218

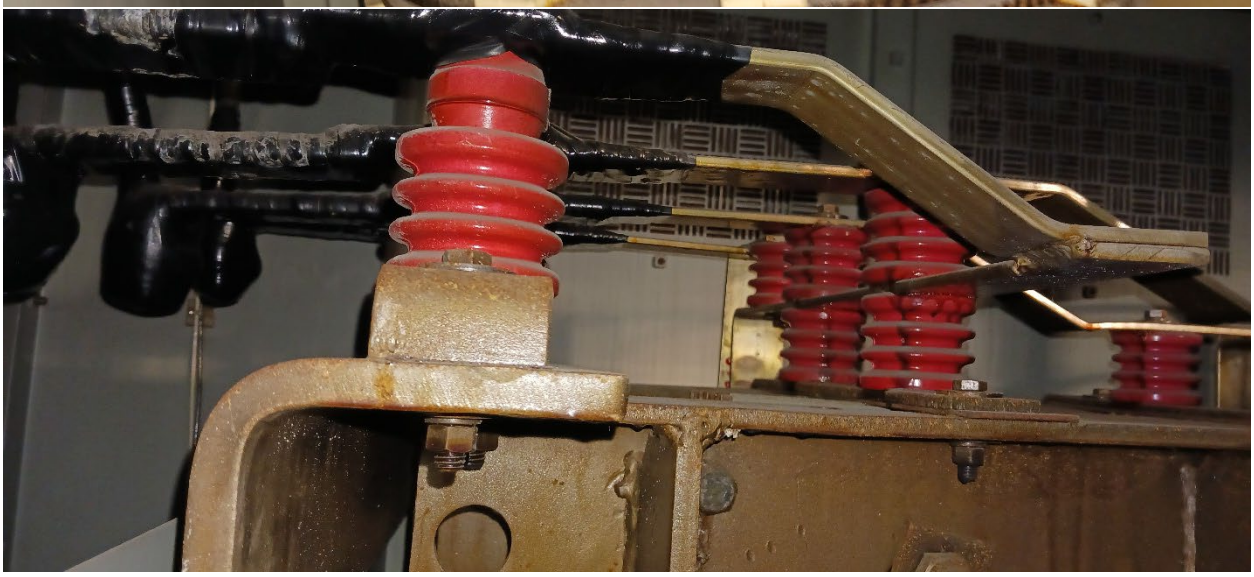


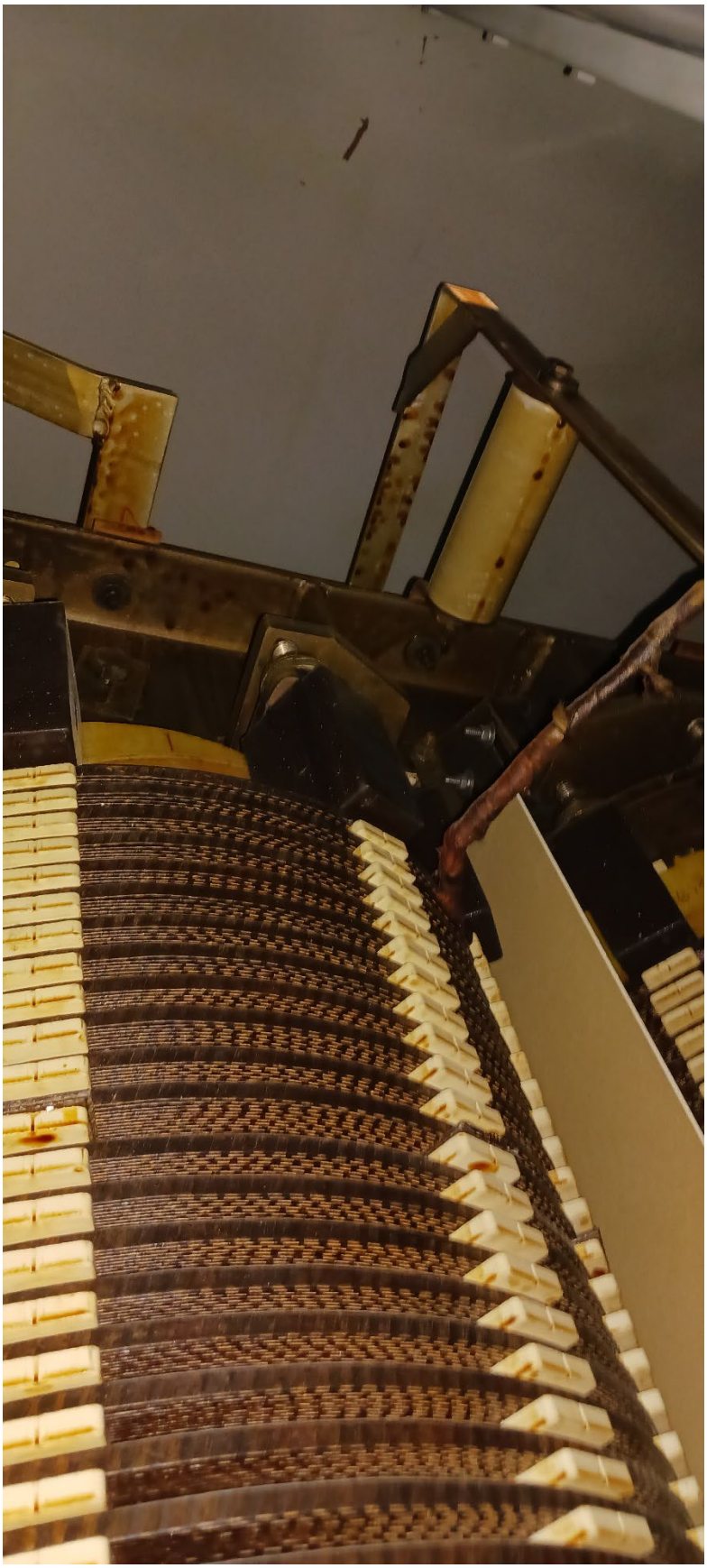

2 AND 3 350 175000
LOW VOLTAGE CONNECTIONS
LINES ON VOLTS
8 AND 9 2300
TO MEASURE CURRENT IN HIGH VOLTAGE CIRCUIT
CONNECT AMMETER TO NO. 6 AND NO. 7 AND INSERT
CIGARETTE PAPER UNDER SPRING OF FILM CUTOUT
MAXIMUM CURRENT OF VOLTMETER COIL IS ½ AM
OPERATION ONE HOUR 55°C.
APPROX. W
IMPEDANCE VOLTS 3.49 PERCENT
FOR INDOOR IN
OPERATING

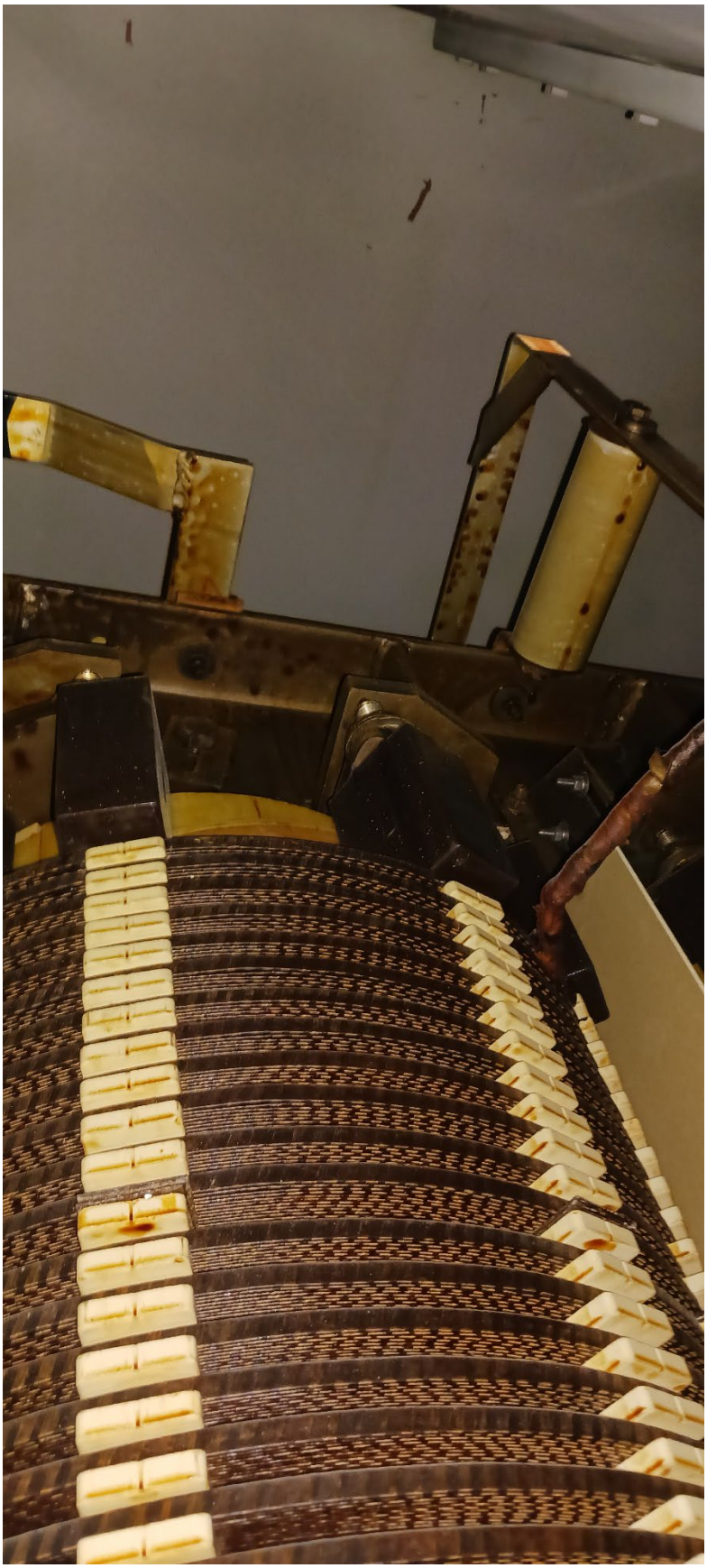
5515-2

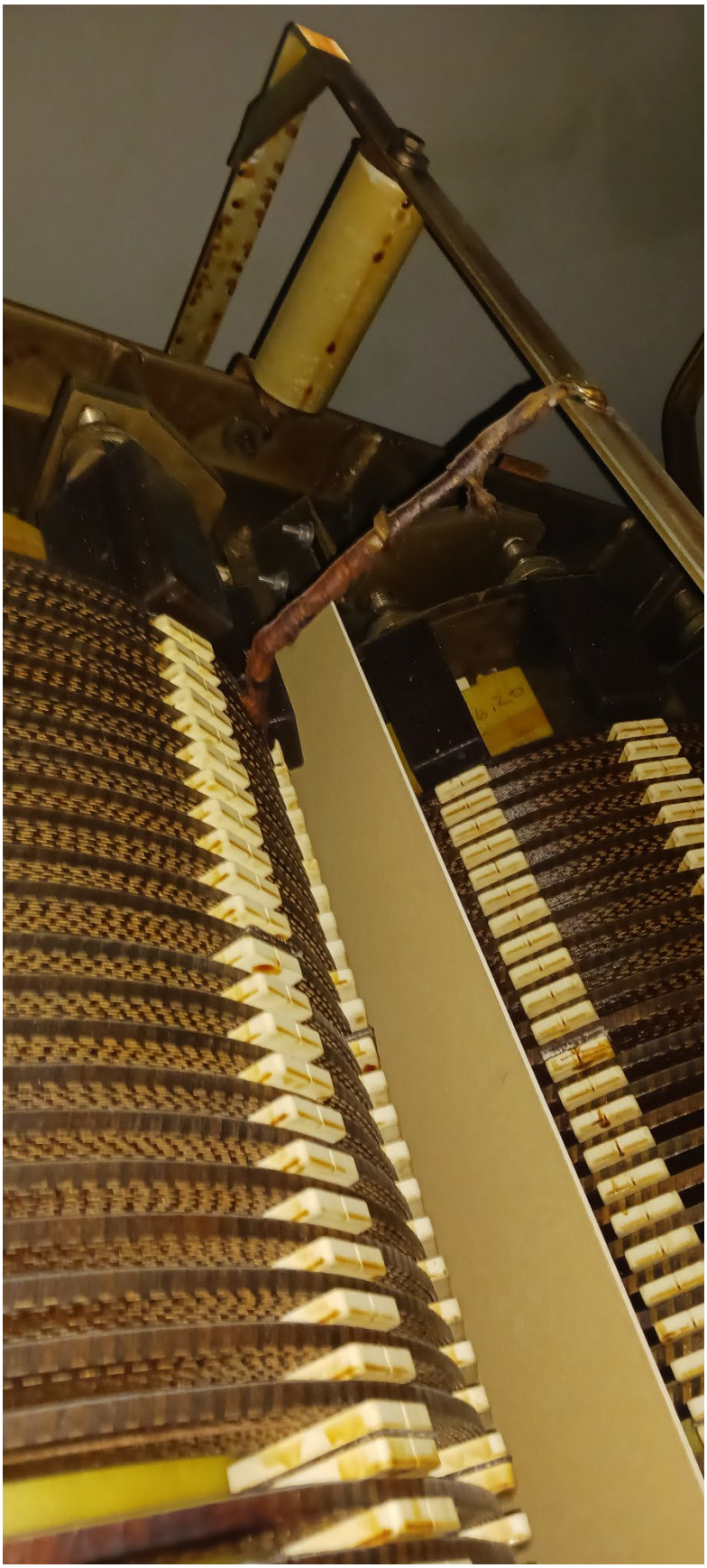


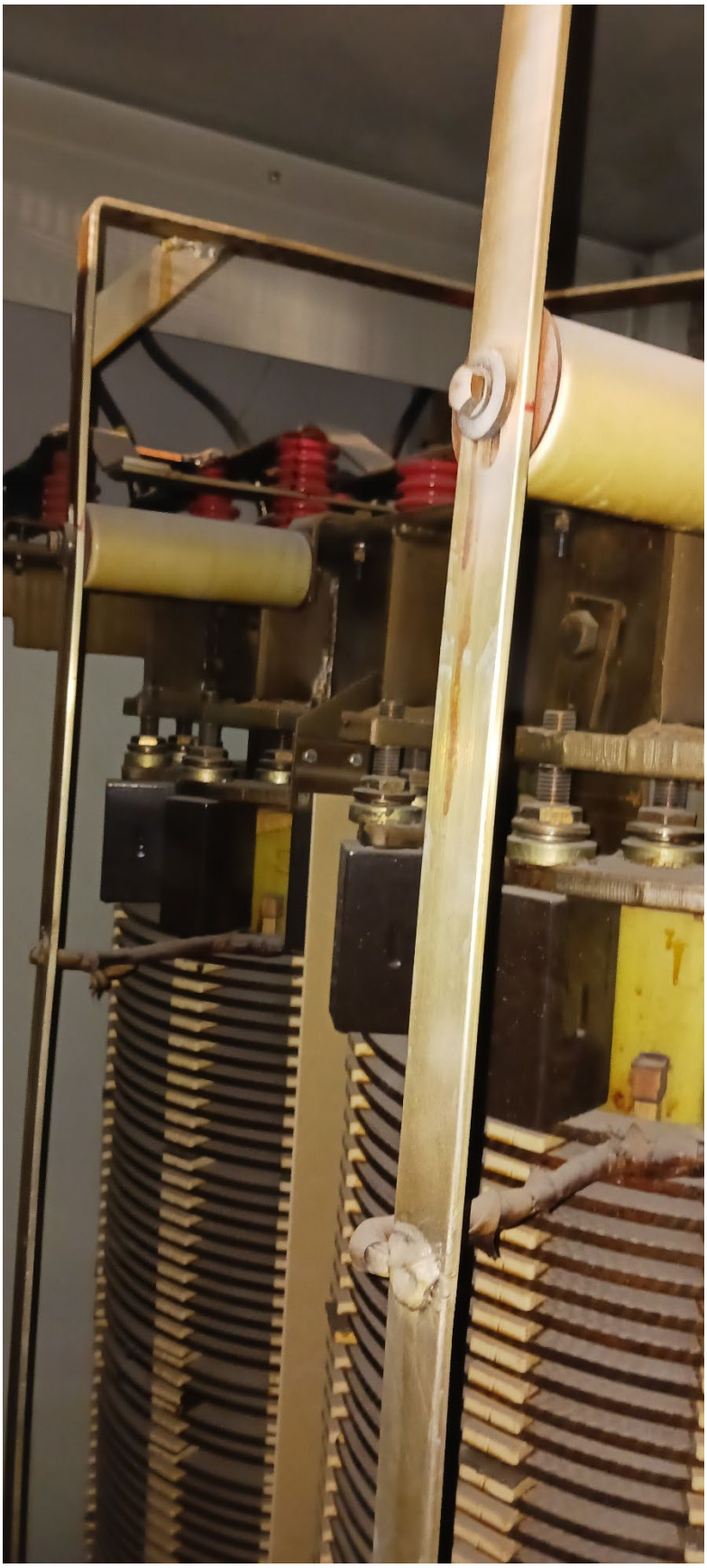


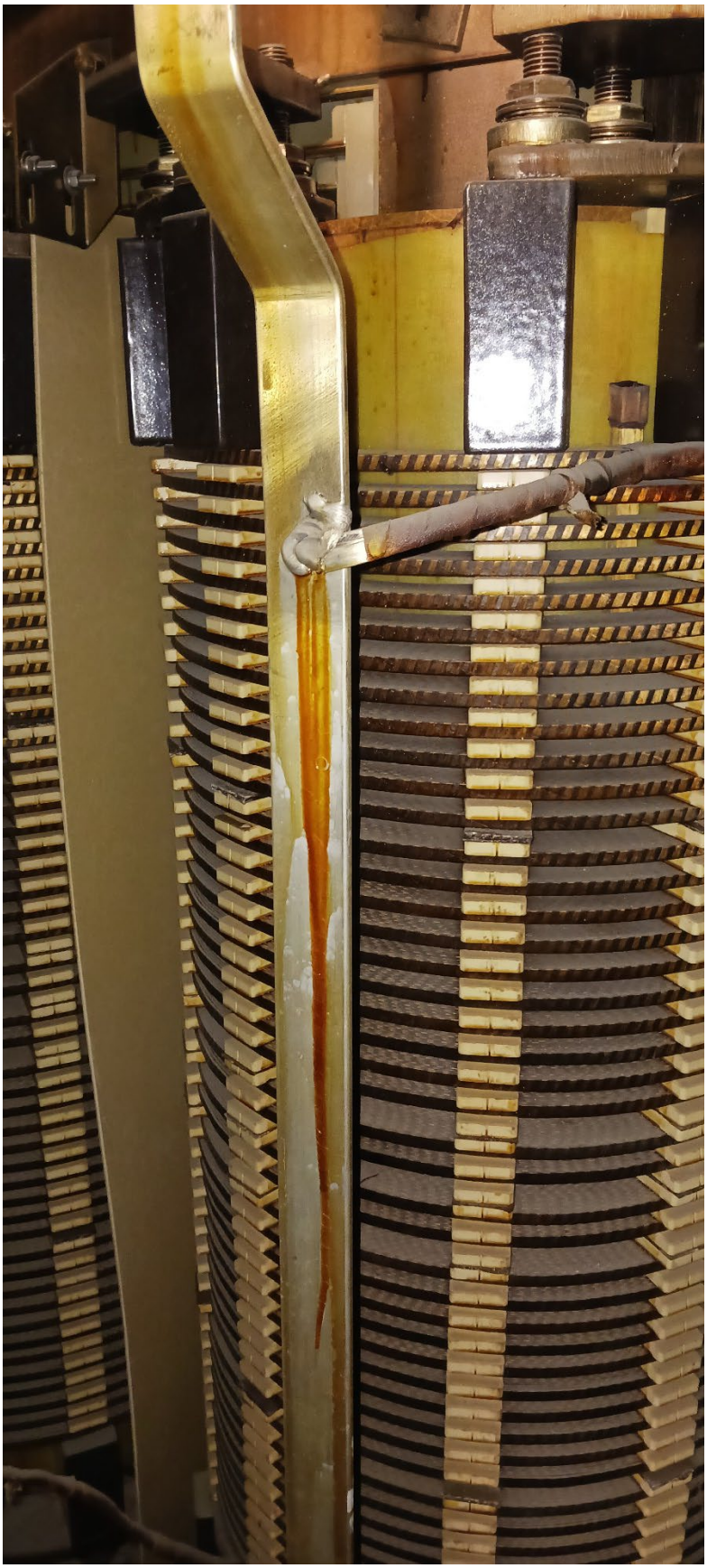


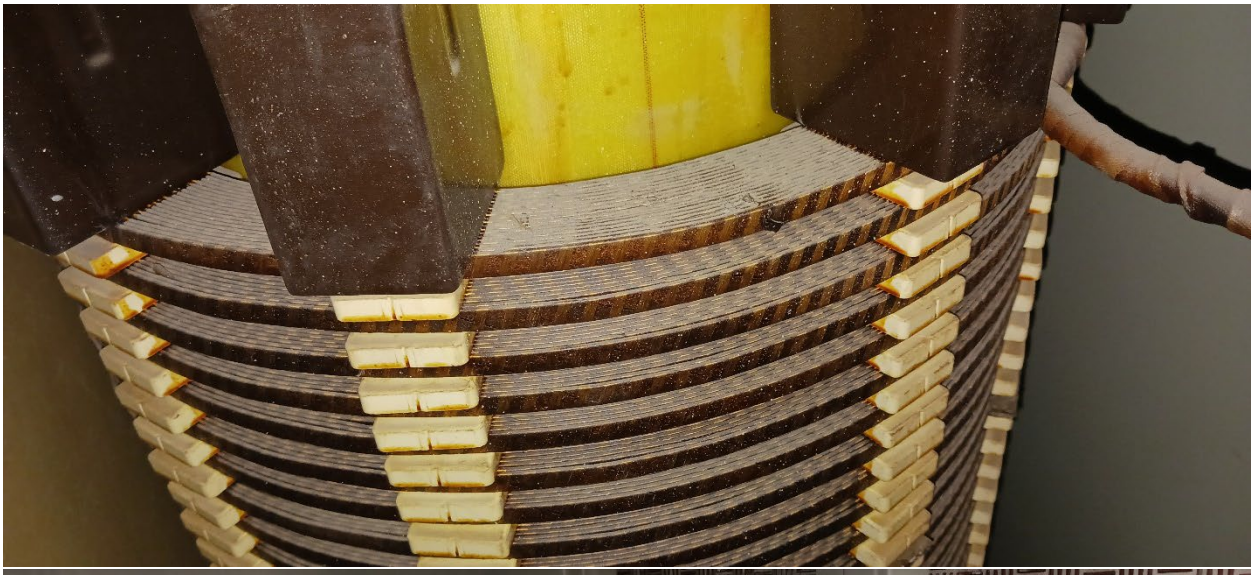


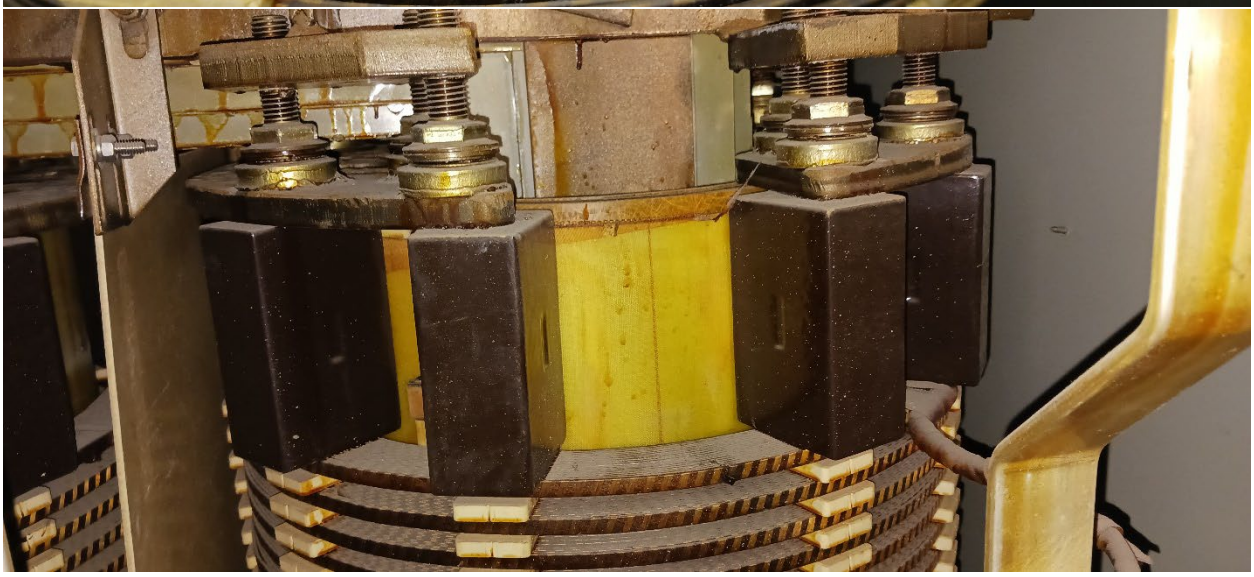






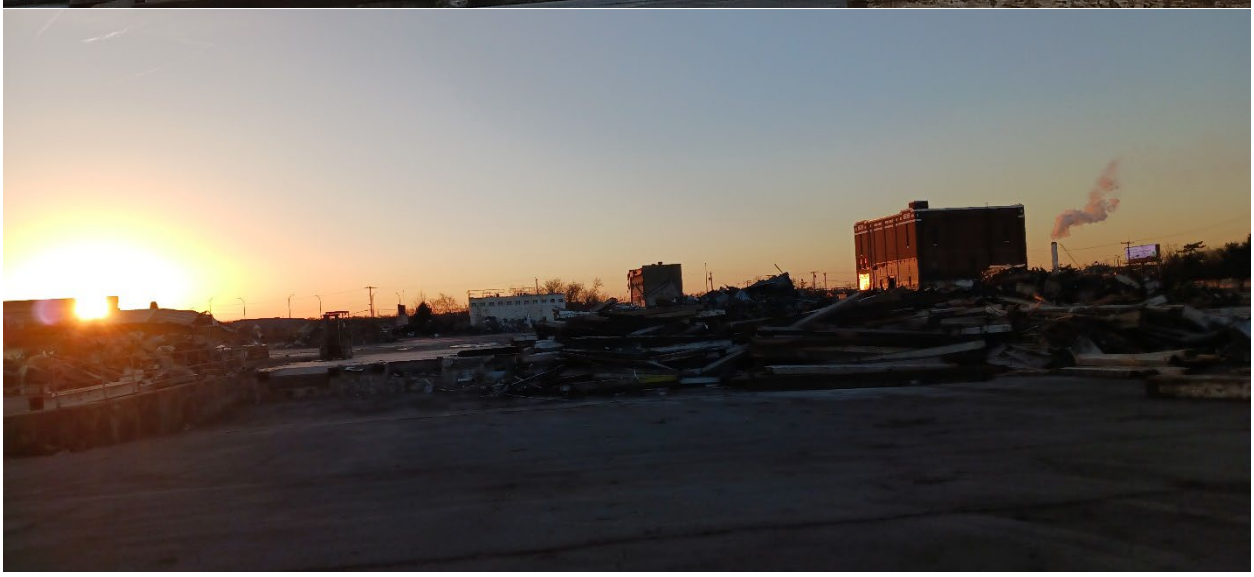




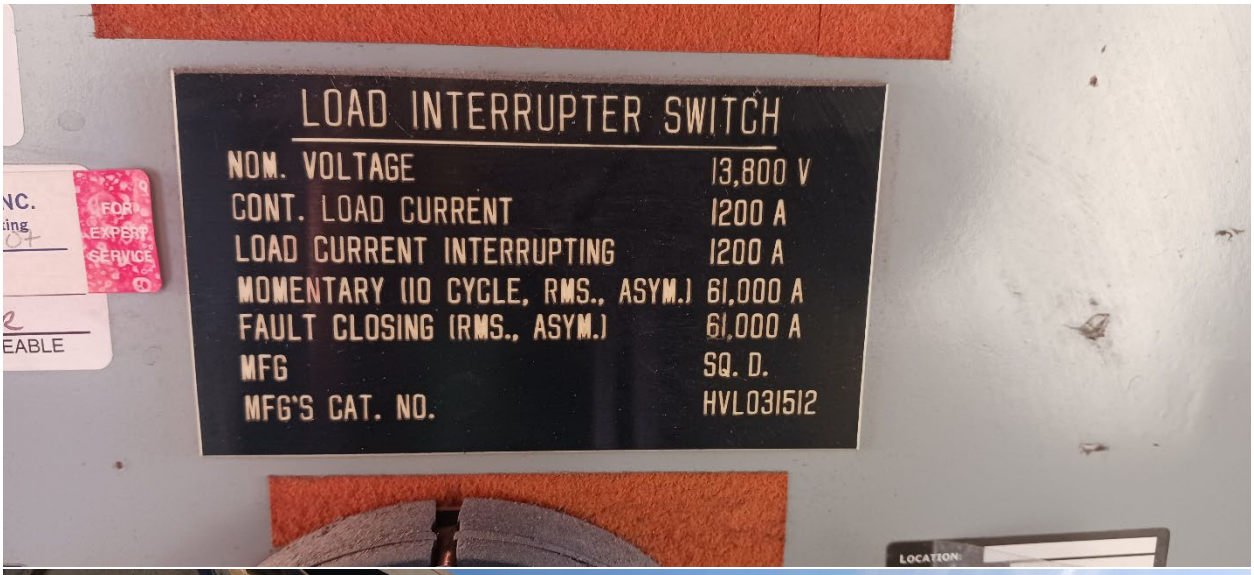


INSTRUMENT TRANSFORMER
CAUTION!
GENERAL ELECTRIC CO. U.S.A.
X1
INSTRUMENT TRANSFORMER
CAUTION!
GENERAL ELECTRIC CO. U.S.A.

INSTRUMENT TRANSFORMER
POTENTIAL
NO. 4199869
SPEC. 3140992
TYPE F-22
V-A. 50
CYC. 60
SEC. VOLTS 110
FOR 1100
VOLTS LINE TO LINE
DESIGNED FOR
CORRECT RATIO.
AT 110 V.
25 V-A.
AT 100% P.F.
CAUTION! BEFORE INSTALLING OR OPERATING
READ INST. GEH-230 B
GENERAL ELECTRIC CO., U.S.A.
NA2746

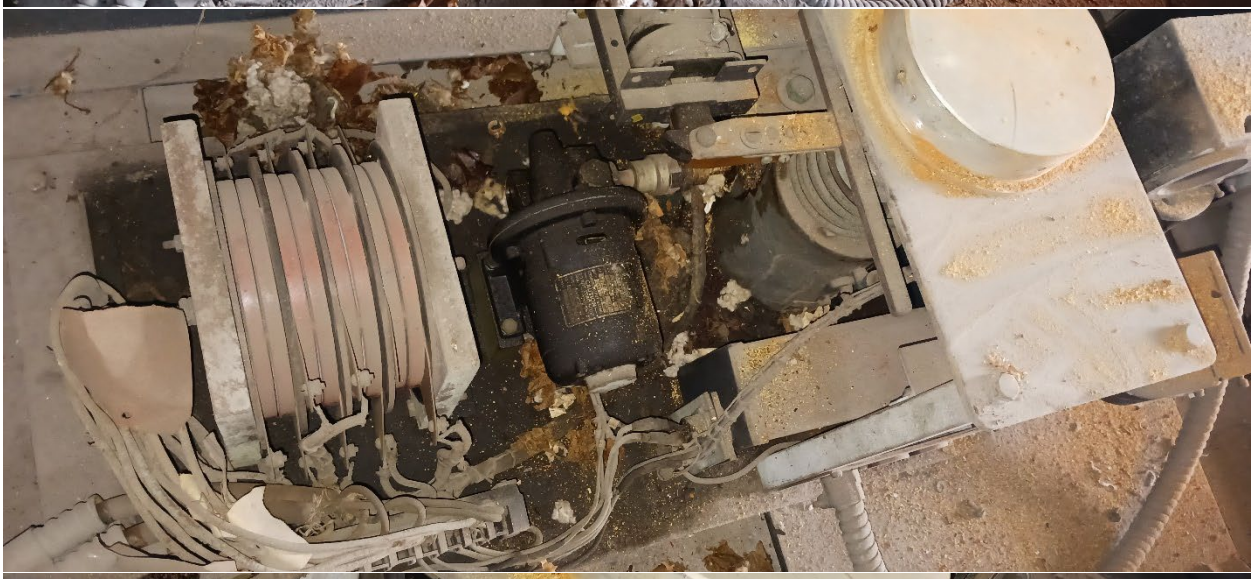


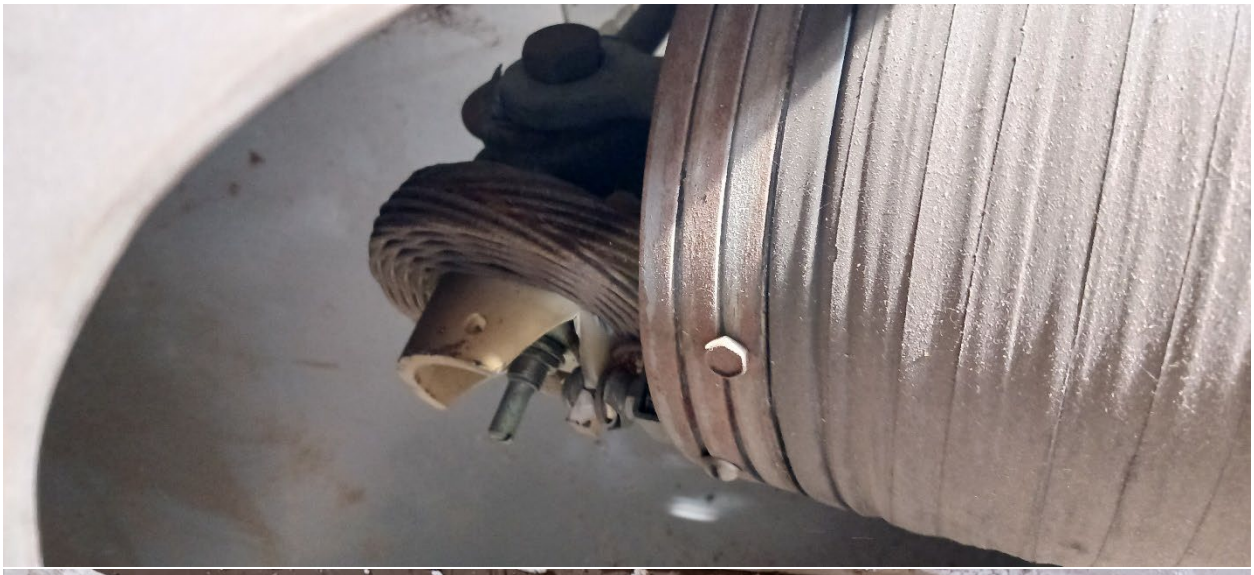
DANGER
HIGH VOLTAGE
KEEP OUT
LOAD INTERRUPTER SWITCH
NOM. VOLTAGE 13,800 V
CONT. LOAD CURRENT 1200 A
LOAD CURRENT INTERRUPTING 1200 A
MOMENTARY (10 CYCLE, RMS, ASYM.) 61,000 A
FAULT CLOSING (RMS, ASYM.) 61,000 A
MFG SQ. D.
MFG'S CAT. NO. HVL03512
FROM
VAULT 7

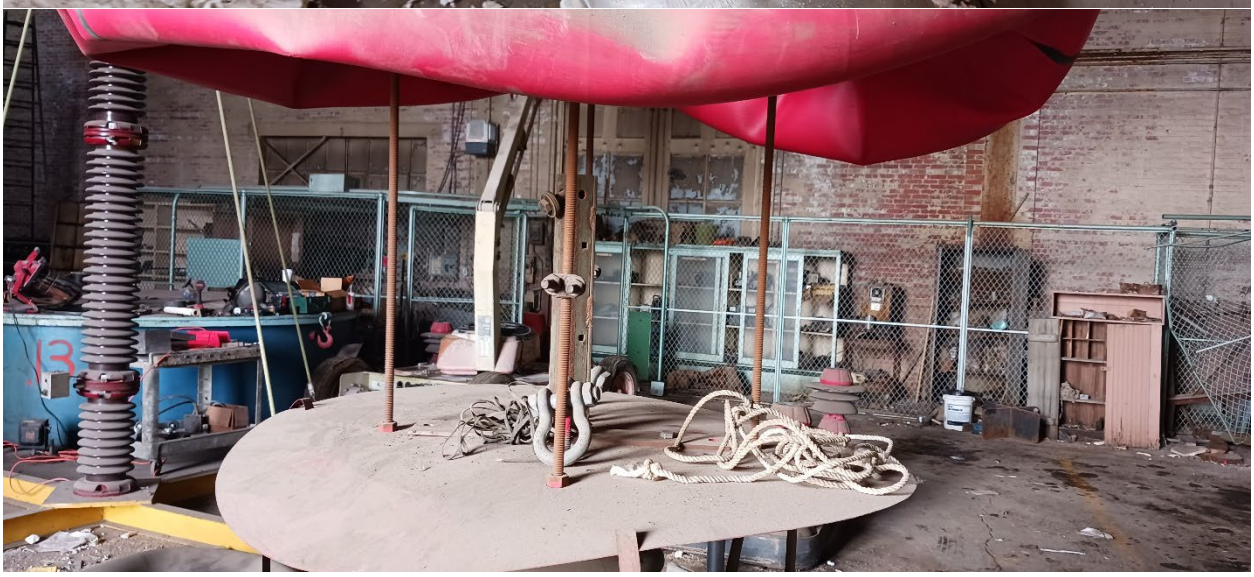

LOAD INTERRUPTER SWITCH
NOM. VOLTAGE 13,800 V
CONT. LOAD CURRENT 1200 A
LOAD CURRENT INTERRUPTING 1200 A
MOMENTARY (10 CYCLE, RMS., ASYM.) 61,000 A
FAULT CLOSING (RMS., ASYM.) 61,000 A
MFG SQ. D.
MFG'S CAT. NO. HVL031512
FOR EXPERT SERVICE
LOCATION:

429

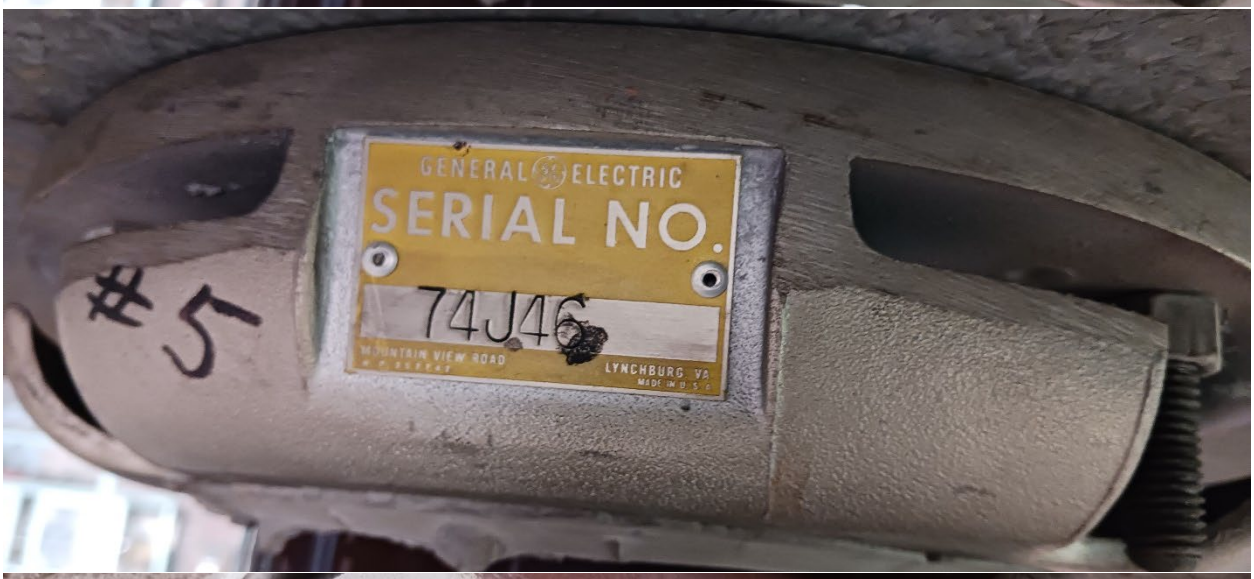
13



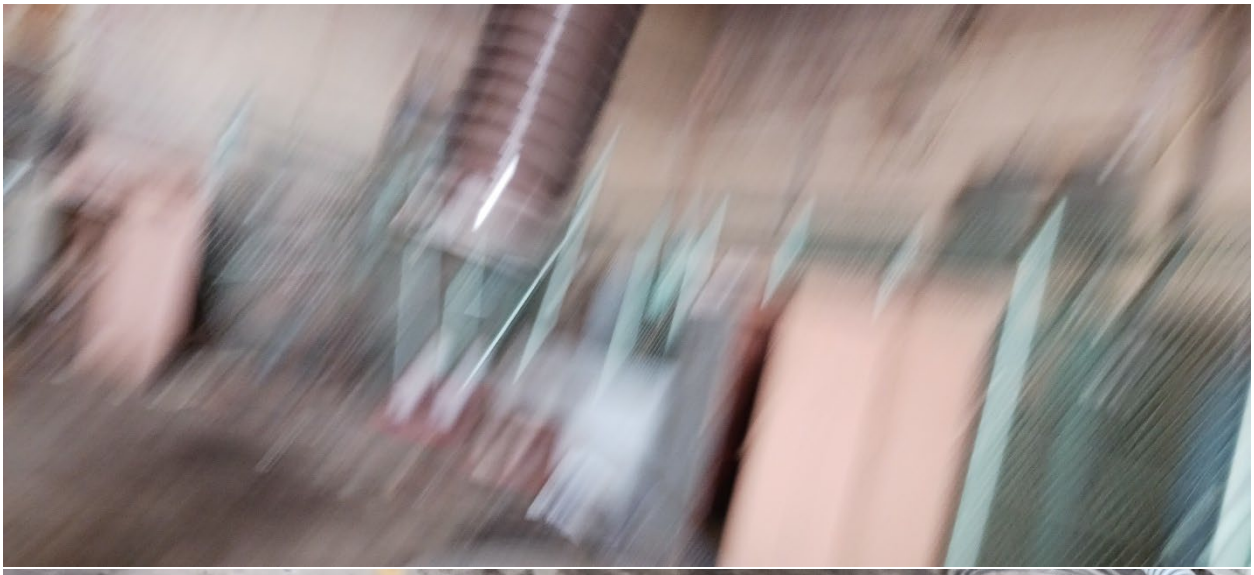




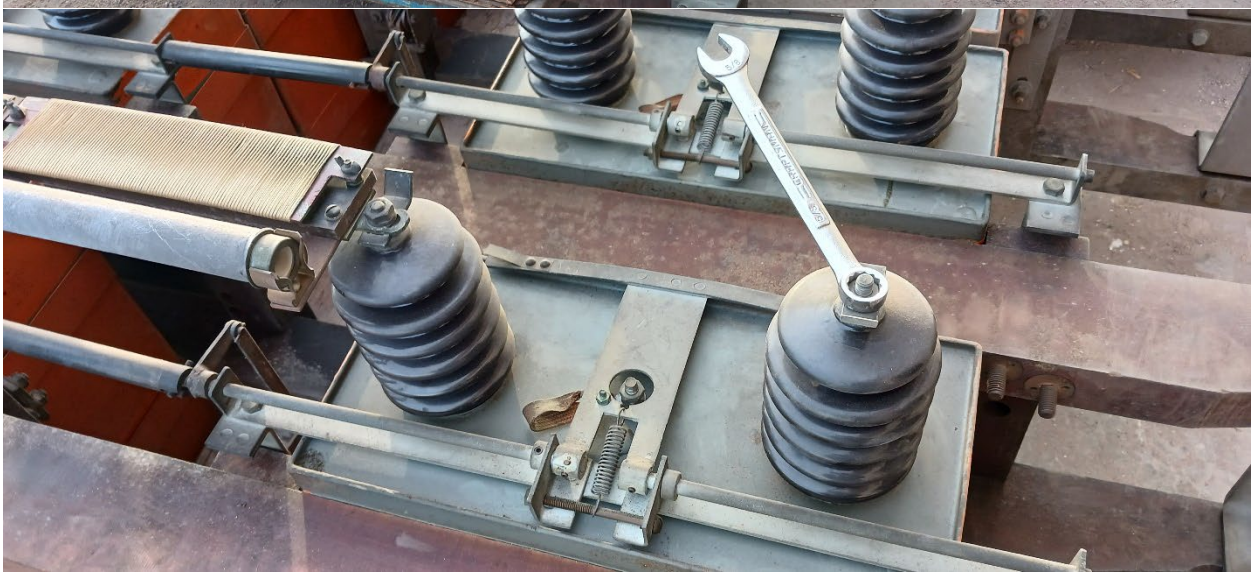
#5
GENERAL ELECTRIC
SERIAL NO.
74J46
MOUNTAIN VIEW ROAD
LYNCHBURG VA

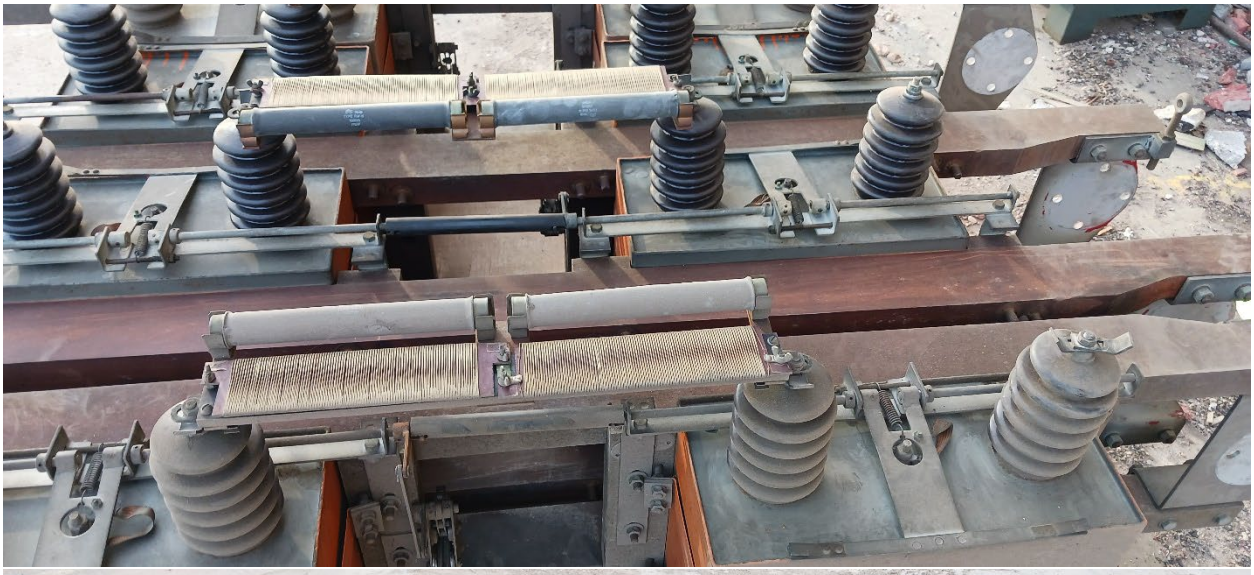

#5
GENERAL ELECTRIC
SERIAL NO.
74J46
MOUNTAIN VIEW ROAD
LYNCHBURG VA

GENERAL ELECTRIC
COUPLING CAPACITOR UNIT
3585
74J46
5121
650
LYNCHBURG VA



used by itself
for Park
25cm
V-T

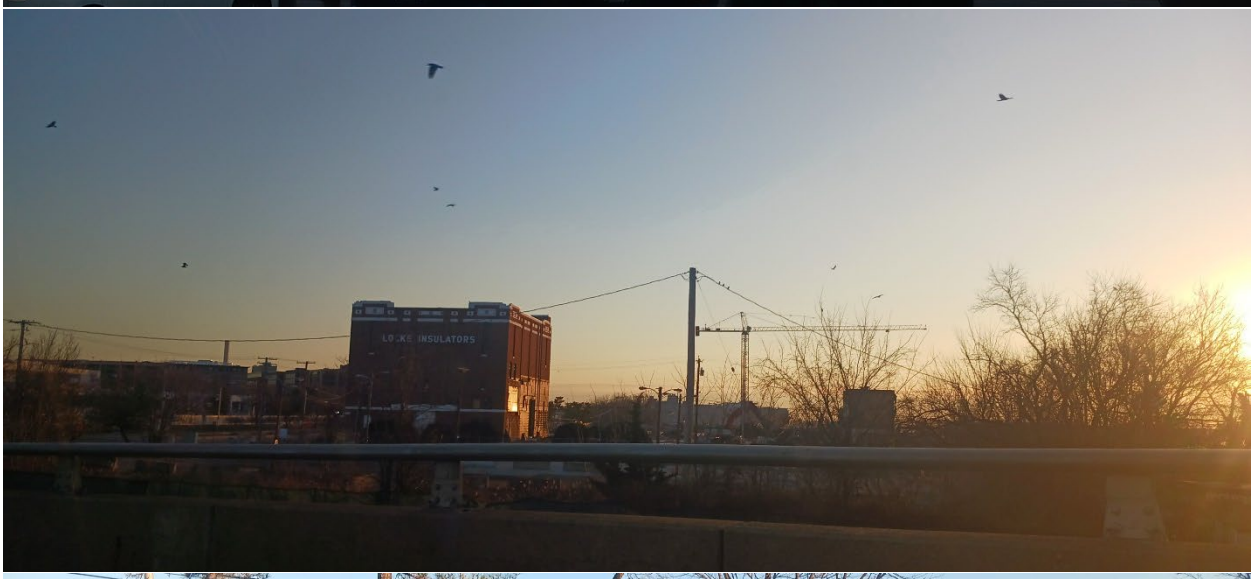


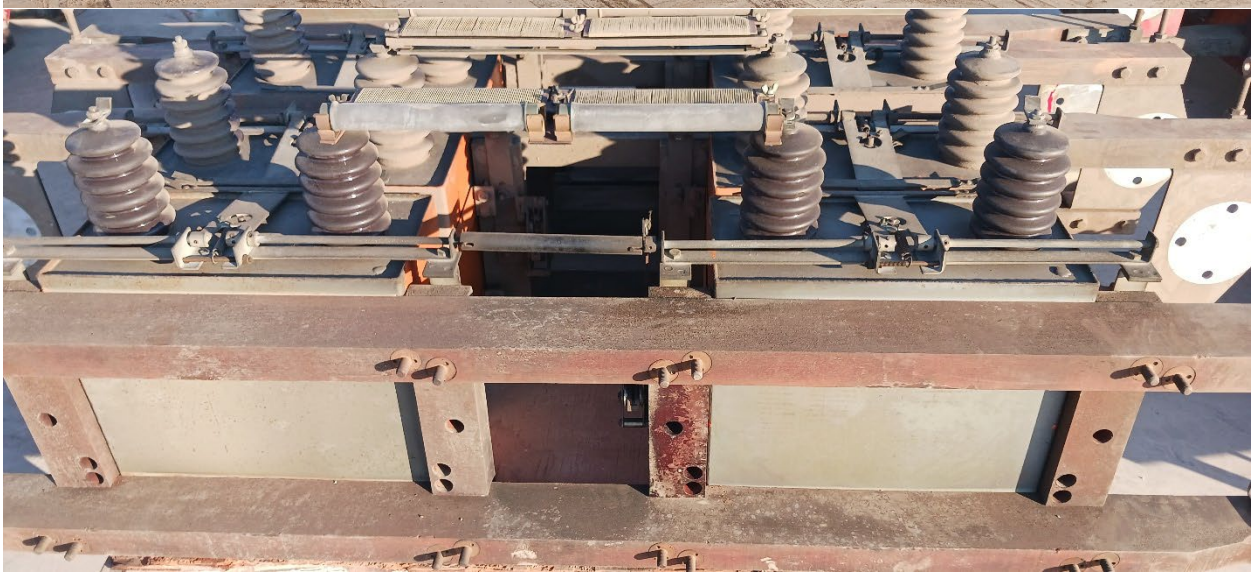


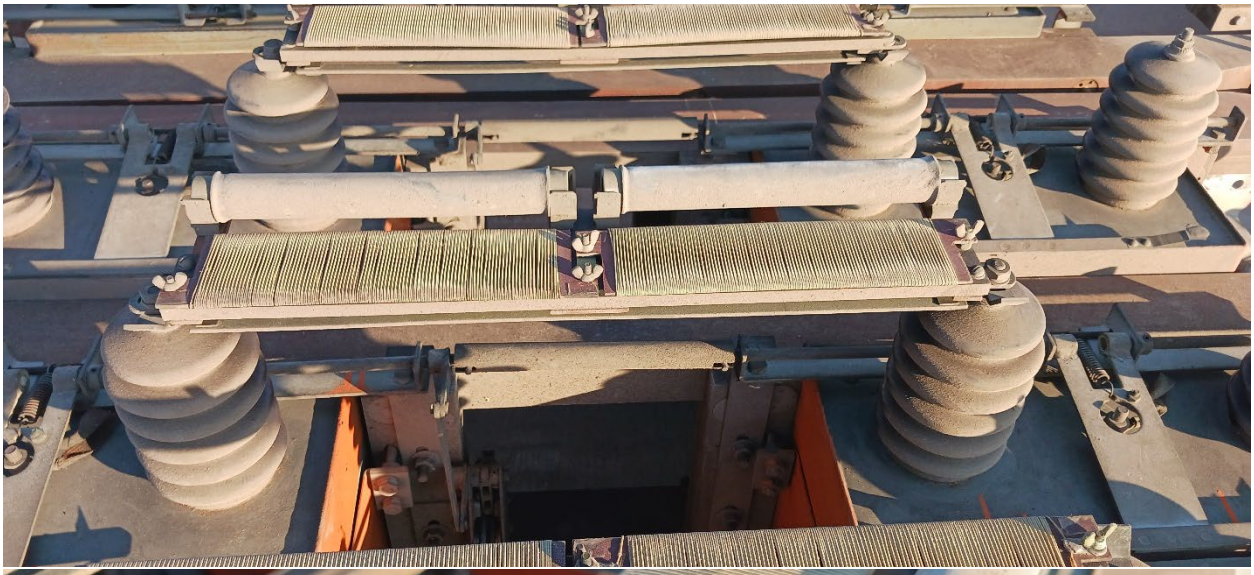
A
B
C
A
B
C
S&C SNUFF

B
BLOWN

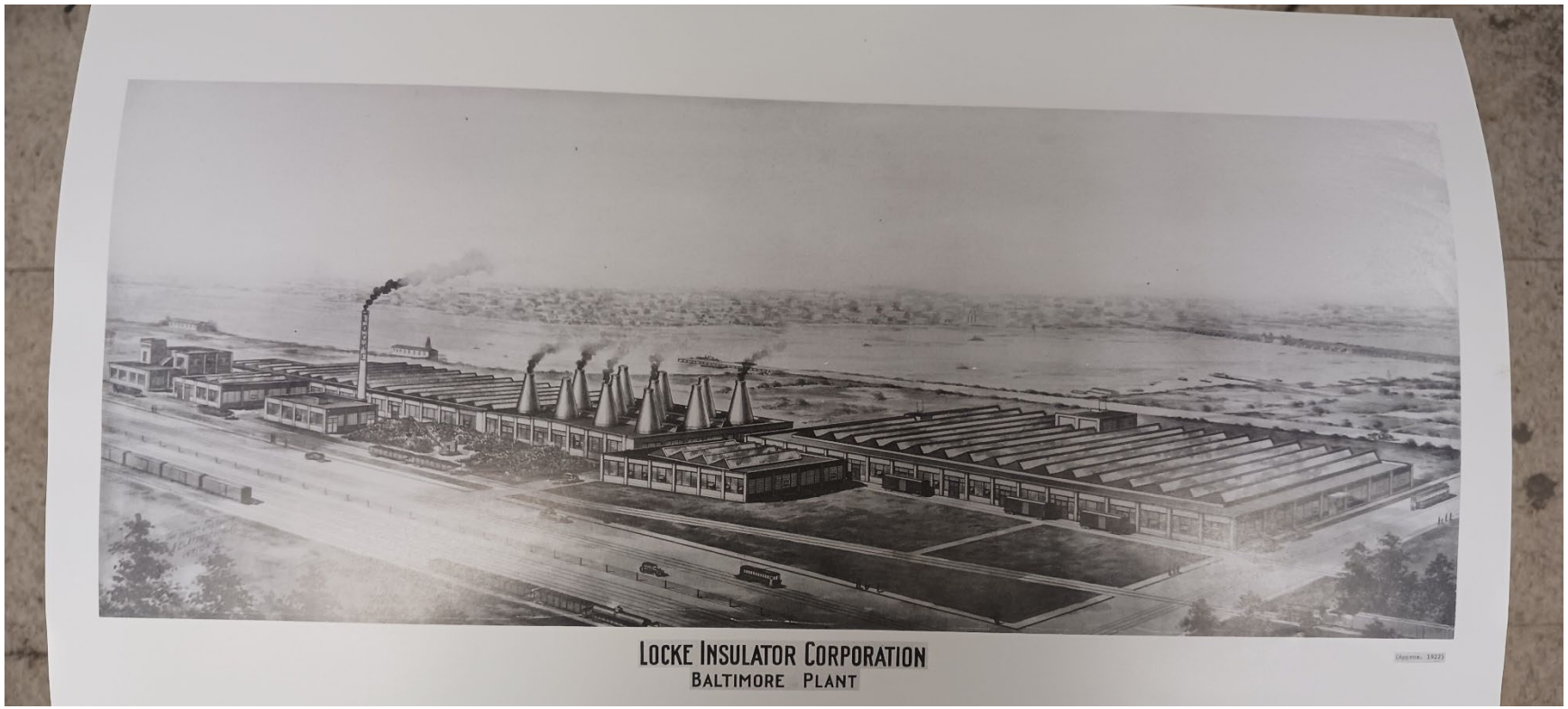
920







THE UNITED STATES OF AMERICA
FIVE DOLLARS
Logitech



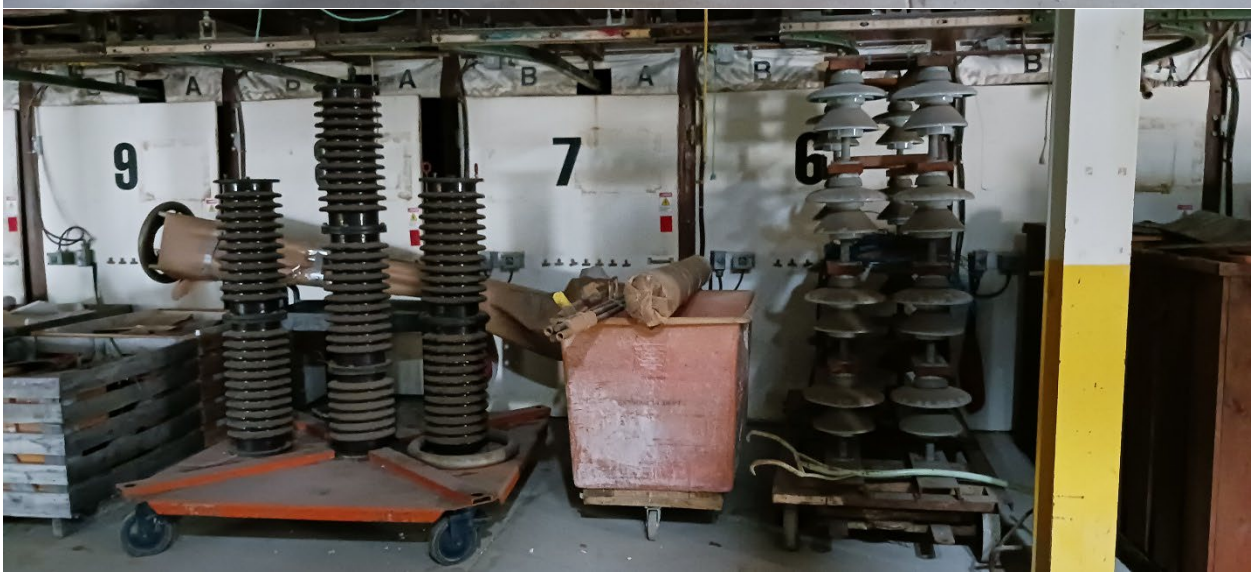
LOCKE INSULATOR CORPORATION

BALTIMORE PLANT

(Approx. 1922)

2

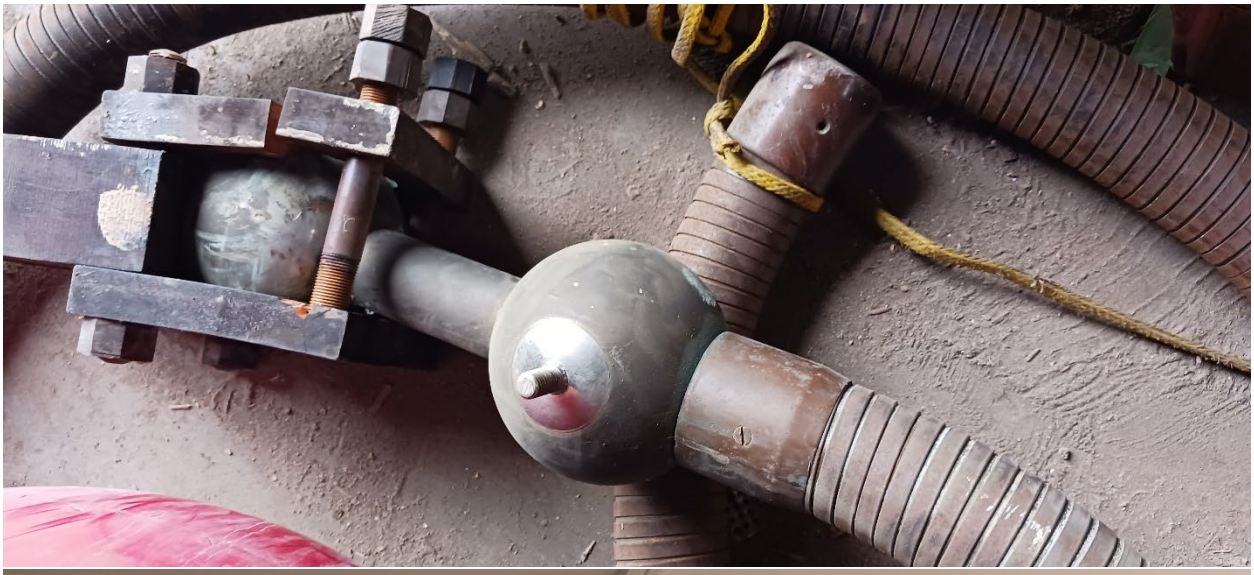
5
4
3
KEEP DRY - MANTER SECO


9
7
6

11
10
9
8

WRIGHT
1
23

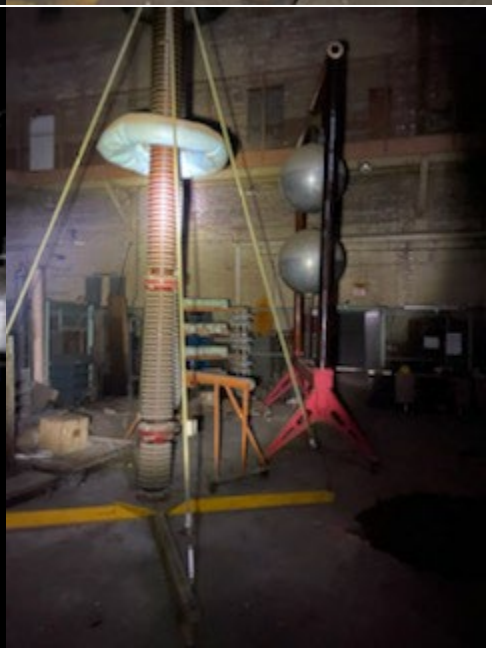
WRIGHT
20



THERE REALLY IS
NO SUCH THING AS
THERE ARE ONLY
ARTISTS

ICE CREAM
COMBO

AGASTAT



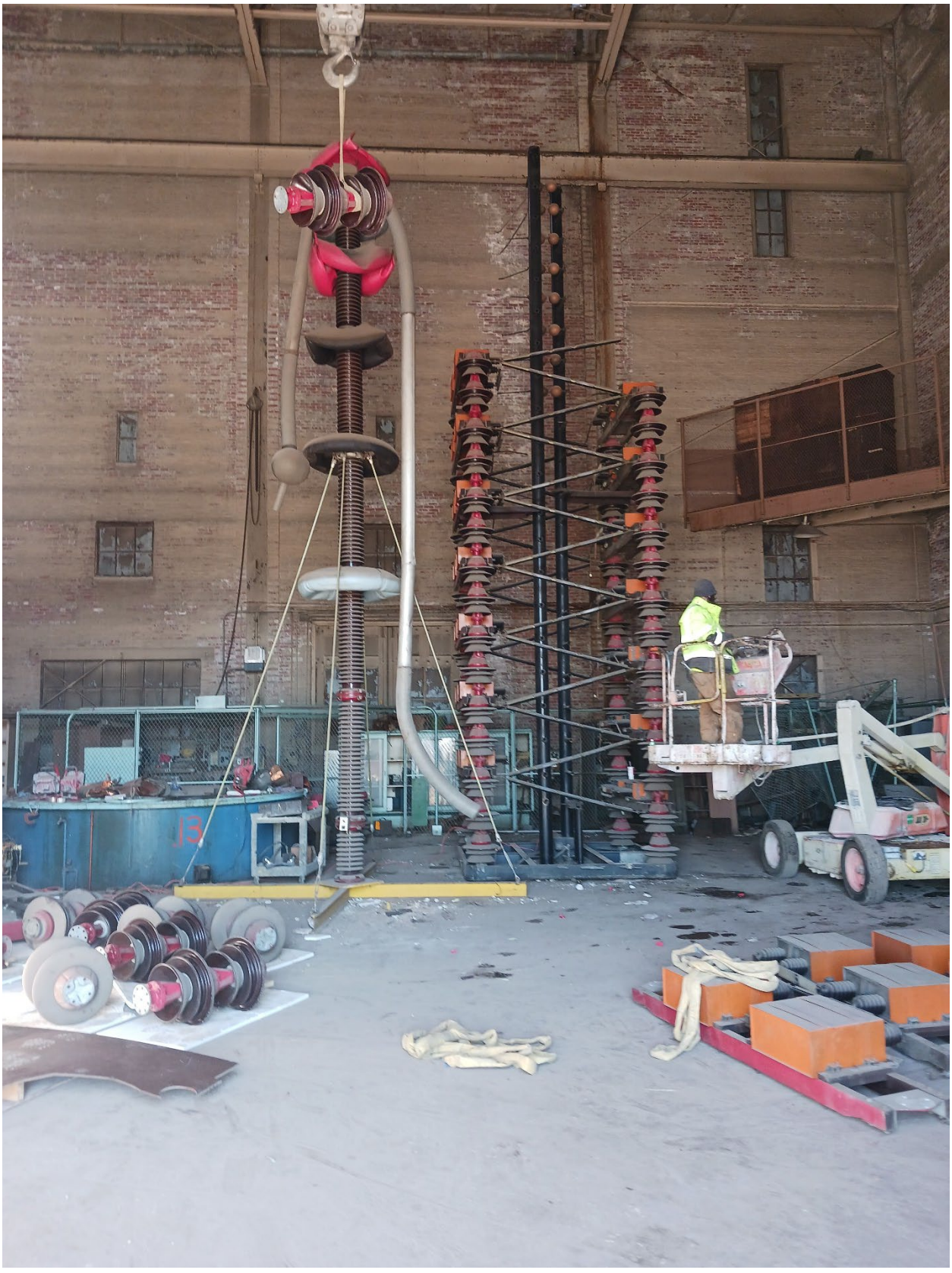
Tektronix

IMPULSE TESTING
EQUIPMENT
GENERAL ELECTRIC

RECORD

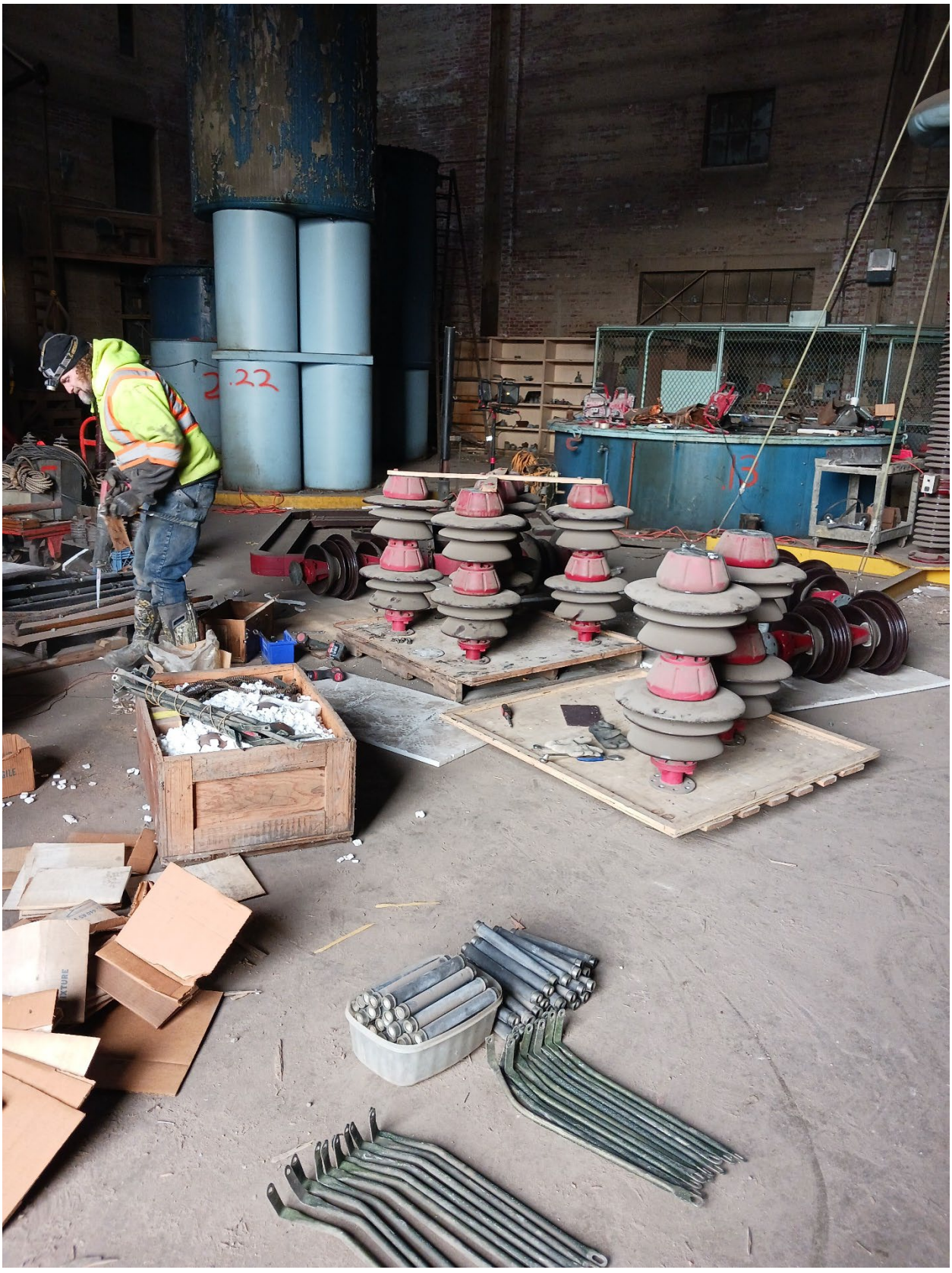
CD 5515-2
SHUTTLEL
601176 157
SHUTTLELIFT
by Manitowoc

CD 5515-2
SHUTTLEL
601176 157
SHUTTLELIFT
by Manitowoc



.22
.13

JLG
JLG 30-



SMITHSONIAN
INSTITUTION
SPARK
EXIT
EXIT